

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: June 3, 2005, 12:44:18 ; Search time 22 Seconds
(without alignments)
386.818 Million cell updates/sec

Title: US-10-791-619-12

Perfect score: 625
Sequence: 1 EVOLVESGGGLVPGGSLRL...YCARSHYFGHHPAVWGOG 114

Scoring table: BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

- 1: /cgn2_6/ptodata/1/1aa/5A_COMB.pep.*
- 2: /cgn2_6/ptodata/1/1aa/5B_COMB.pep.*
- 3: /cgn2_6/ptodata/1/1aa/6A_COMB.pep.*
- 4: /cgn2_6/ptodata/1/1aa/6B_COMB.pep.*
- 5: /cgn2_6/ptodata/1/1aa/PCUTS_COMB.pep.*
- 6: /cgn2_6/ptodata/1/1aa/backfilest.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	625	100.0	114	2	US-08-887-352B-12
2	625	100.0	114	3	US-09-109-207C-12
3	625	100.0	114	3	US-09-296-005-12
4	625	100.0	114	4	US-09-920-171-12
5	625	100.0	114	4	US-09-716-028-12
6	625	100.0	114	4	US-10-113-996-12
7	625	100.0	229	3	US-08-887-352B-20
8	625	100.0	229	3	US-09-109-207C-20
9	625	100.0	229	3	US-09-296-005-20
10	625	100.0	229	4	US-09-920-171-20
11	625	100.0	229	4	US-09-716-028-20
12	625	100.0	229	4	US-10-113-996-20
13	625	100.0	233	2	US-08-887-352B-25
14	625	100.0	233	3	US-09-109-207C-25
15	625	100.0	233	3	US-09-296-005-25
16	625	100.0	233	4	US-09-920-171-25
17	625	100.0	233	4	US-09-716-028-25
18	625	100.0	233	4	US-10-113-996-25
19	625	100.0	248	2	US-08-887-352B-32
20	625	100.0	248	3	US-09-109-207C-32
21	625	100.0	248	3	US-09-296-005-32
22	625	100.0	248	4	US-09-920-171-32
23	625	100.0	248	4	US-09-716-028-32
24	625	100.0	248	4	US-10-113-996-32
25	625	100.0	451	2	US-08-887-352B-14
26	625	100.0	451	2	US-08-887-352B-16
27	625	100.0	451	3	US-08-466-151-65

28	625	100.0	451	3	US-09-109-207C-14	Sequence 14, Appl
29	625	100.0	451	3	US-09-109-207C-16	Sequence 16, Appl
30	625	100.0	451	3	US-09-296-005-14	Sequence 14, Appl
31	625	100.0	451	3	US-09-296-005-16	Sequence 16, Appl
32	625	100.0	451	4	US-09-920-171-14	Sequence 14, Appl
33	625	100.0	451	4	US-09-920-171-16	Sequence 16, Appl
34	625	100.0	451	4	US-09-716-028-14	Sequence 14, Appl
35	625	100.0	451	4	US-09-716-028-16	Sequence 16, Appl
36	625	100.0	451	4	US-10-113-996-14	Sequence 14, Appl
37	625	100.0	451	4	US-10-113-996-16	Sequence 16, Appl
38	605	96.8	121	2	US-08-887-352B-3	Sequence 3, Appli
39	605	96.8	121	3	US-09-109-207C-3	Sequence 3, Appli
40	605	96.8	121	3	US-09-296-005-3	Sequence 3, Appli
41	605	96.8	121	4	US-09-920-171-3	Sequence 3, Appli
42	605	96.8	121	4	US-09-716-028-3	Sequence 3, Appli
43	605	96.8	121	4	US-10-113-996-3	Sequence 3, Appli
44	605	96.8	453	3	US-08-466-151-8	Sequence 8, Appli
45	605	96.8	453	3	US-08-466-163B-8	Sequence 8, Appli

ALIGNMENTS

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RESULT 1
US-08-887-352B-12
; Sequence 12, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
; TITLE OF INVENTION: Improving Polypeptides
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 114 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; US-08-887-352B-12
Query Match 100.0%; Score 625; DB 2; Length 114;
Best Local Similarity 100.0%; Pred. No. 4.6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVPGGSLRLCAVSGYSITSGYGMNIRQAPGKLEWVASITTDGNTNY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYGMNIRQAPGKLEWVASITTDGNTNY 60
QY 61 NPSTYKGRITTSRDSKNTFTYQNNLSRAEDTAIVYVCARSHYFGHHPAVWGOG 114
DB 61 NPSTYKGRITTSRDSKNTFTYQNNLSRAEDTAIVYVCARSHYFGHHPAVWGOG 114

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RESULT 2
US-09-109-207C-12
; Sequence 12, Application US/09109207C
; Patent No. 6172313
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 12
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Heavy chain sequence derived from MAb11
US-09-109-207C-12
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Query Match      100.0%; Score 625; DB 3; Length 114;
Best Local Similarity 100.0%; Pred. No. 4,6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Qy      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Db      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Qy      61 NPSVKGRITTSRSDSKNTFYLQNMNLSRAEDTAIVYVCARGSHYFGHMFPAWVGQ 114
Db      61 NPSVKGRITTSRSDSKNTFYLQNMNLSRAEDTAIVYVCARGSHYFGHMFPAWVGQ 114
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RESULT 3
US-09-296-005-12
; Sequence 12, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1
; CURRENT APPLICATION NUMBER: US/09/296,005
; PRIOR FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 12
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Heavy chain sequence derived from MAb11
US-09-296-005-12
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Query Match      100.0%; Score 625; DB 3; Length 114;
Best Local Similarity 100.0%; Pred. No. 4,6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Qy      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Db      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Qy      61 NPSVKGRITTSRSDSKNTFYLQNMNLSRAEDTAIVYVCARGSHYFGHMFPAWVGQ 114
Db      61 NPSVKGRITTSRSDSKNTFYLQNMNLSRAEDTAIVYVCARGSHYFGHMFPAWVGQ 114
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RESULT 4
US-09-920-171-12
; Sequence 12, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 12
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAb11
US-09-920-171-12
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Query Match      100.0%; Score 625; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 4,6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Qy      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Db      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Qy      61 NPSVKGRITTSRSDSKNTFYLQNMNLSRAEDTAIVYVCARGSHYFGHMFPAWVGQ 114
Db      61 NPSVKGRITTSRSDSKNTFYLQNMNLSRAEDTAIVYVCARGSHYFGHMFPAWVGQ 114
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RESULT 5
US-09-716-028-12
; Sequence 12, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 12
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Heavy chain sequence derived from MAb11
US-09-716-028-12
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Query Match      100.0%; Score 625; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 4,6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Qy      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
Db      1 EVOLVESGGGLVPGGSLRLSCAVSIGSYISGYSNMNIRQAPGKLEWVASITTDGSTNY 60
```

Qy 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
Db 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 6

US-10-113-996-12
; Sequence 12, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-1GE Antibodies
; FILE REFERENCE: P1123CJUS
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 12
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-10-113-996-12

Query Match 100.0%; Score 625; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 4,6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60

Qy 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
Db 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 7

US-08-887-352B-20
; Sequence 20, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of
; TITLE OF INVENTION: Improving Polypeptides
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Minipac (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.

REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 20:
SEQUENCE CHARACTERISTICS:
LENGTH: 229 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-20

Query Match 100.0%; Score 625; DB 2; Length 229;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60

Qy 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
Db 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 8

US-09-109-207C-20
; Sequence 20, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of Improving Polypeptide
; FILE REFERENCE: P1123RI
; CURRENT APPLICATION NUMBER: US/09/109,207C
; CURRENT FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 20
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-229
; OTHER INFORMATION: Heavy chain F(ab) sequence derived from MAE11
US-09-109-207C-20

Query Match 100.0%; Score 625; DB 3; Length 229;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60

Qy 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
Db 61 NPSYKGRITTSRDSKNTFYLMNMSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 9

US-09-296-005-20
; Sequence 20, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123CJit
; CURRENT APPLICATION NUMBER: US/09/296,005
; CURRENT FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02

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/ NUMBER OF SEQ ID NOS: 26
/ SEQ ID NO 20
/ LENGTH: 229
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-229
/ OTHER INFORMATION: Heavy chain F(ab) sequence derived from MAb11
US-09-296-005-20
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Query Match          100.0%; Score 625; DB 3; Length 229;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
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QY 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
DB 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
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RESULT 10
US-09-920-171-20
/ Sequence 20, Application US/09920171
/ Patent No. 6682735
/ GENERAL INFORMATION:
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/ APPLICANT: Lowman, Henry B.
/ APPLICANT: Presta, Leonard G.
/ APPLICANT: Jardieu, Paula M.
/ APPLICANT: Lowe, John
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
/ FILE REFERENCE: P1123C2US
/ CURRENT APPLICATION NUMBER: US/09/920,171
/ CURRENT FILING DATE: 2001-08-01
/ PRIOR APPLICATION NUMBER: US 08/887,352
/ PRIOR FILING DATE: 1997-07-02
/ PRIOR APPLICATION NUMBER: US 09/296,005
/ PRIOR FILING DATE: 1999-04-21
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 20
/ LENGTH: 229
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ OTHER INFORMATION: Heavy chain F(ab) sequence derived from MAb11
US-09-920-171-20
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Query Match          100.0%; Score 625; DB 4; Length 229;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
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QY 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
DB 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
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RESULT 11
US-09-716-028-20
/ Sequence 20, Application US/09716028
/ Patent No. 6723833
/ GENERAL INFORMATION:
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/ APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
/ FILE REFERENCE: P1123RI
/ CURRENT APPLICATION NUMBER: US/09/716,028
/ CURRENT FILING DATE: 2000-11-17
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/ PRIOR APPLICATION NUMBER: US 09/109,207
/ PRIOR FILING DATE: 1998-06-30
/ PRIOR APPLICATION NUMBER: US 60/051,554
/ PRIOR FILING DATE: 1997-07-03
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 20
/ LENGTH: 229
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-229
/ OTHER INFORMATION: Heavy chain F(ab) sequence derived from MAb11
US-09-716-028-20
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Query Match          100.0%; Score 625; DB 4; Length 229;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
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QY 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
DB 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
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RESULT 12
US-10-113-996-20
/ Sequence 20, Application US/10113996
/ Patent No. 6761889
/ GENERAL INFORMATION:
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/ APPLICANT: Lowman, Henry B.
/ APPLICANT: Presta, Leonard G.
/ APPLICANT: Jardieu, Paula M.
/ APPLICANT: Lowe, John
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies
/ FILE REFERENCE: P1123C3US
/ CURRENT APPLICATION NUMBER: US/10/113,996
/ CURRENT FILING DATE: 2002-04-01
/ PRIOR APPLICATION NUMBER: US 08/887,352
/ PRIOR FILING DATE: 1997-07-02
/ PRIOR APPLICATION NUMBER: US 09/296,005
/ PRIOR FILING DATE: 1999-04-21
/ PRIOR APPLICATION NUMBER: US 09/920,171
/ PRIOR FILING DATE: 2001-08-01
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 20
/ LENGTH: 229
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ OTHER INFORMATION: Heavy chain F(ab) sequence derived from MAb11
US-10-113-996-20
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Query Match          100.0%; Score 625; DB 4; Length 229;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
```

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QY 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
DB 61 NPSVKGRIITISRDSDKNTFYLQNMNLSRAEDTAVYYCARGSHYFGHMFAVMGQG 114
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```
RESULT 13
US-08-887-352B-25
/ Sequence 25, Application US/08887352B
/ Patent No. 5994511
```

GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of
TITLE OF INVENTION: Improving Polypeptides
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESSES:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svododa, Craig G.
REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
LENGTH: 233 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-25

Query Match 100.0%; Score 625; DB 2; Length 233;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 14
US-09-109-207C-25
Sequence 25, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of Improving Polypeptide
FILE REFERENCE: P1123R1
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 25
LENGTH: 233
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial sequence
LOCATION: 1-233
OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-09-109-207C-25
Query Match 100.0%; Score 625; DB 3; Length 233;
Best Local Similarity 100.0%; Pred. No. 1e-53;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 15
US-09-296-005-25
Sequence 25, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1r
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
EARLIER APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 26
SEQ ID NO 25
LENGTH: 233
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial sequence
LOCATION: 1-233
OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-09-296-005-25

Query Match 100.0%; Score 625; DB 3; Length 233;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITTDGSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 16
US-09-920-171-25
Sequence 25, Application US/09920171
Patent No. 6682735
GENERAL INFORMATION:
APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.
APPLICANT: Lowe, John
TITLE OF INVENTION: Improved Anti-1GE Antibodies (as amended)
FILE REFERENCE: P1123C2US
CURRENT APPLICATION NUMBER: US/09/920,171
CURRENT FILING DATE: 2001-08-01
PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02
PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 25
LENGTH: 233
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-09-920-171-25

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Query Match      100.0%; Score 625; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
DB      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
QY      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114
DB      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 17
US-09-716-028-25
; Sequence 25, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; PRIOR FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 25
; LENGTH: 233
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial sequence
; LOCATION: 1-233
; OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-09-716-028-25

Query Match      100.0%; Score 625; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
DB      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
QY      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114
DB      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 18
US-10-113-996-25
; Sequence 25, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 06/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1993-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 25
; LENGTH: 233
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; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-10-113-996-25

Query Match      100.0%; Score 625; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
DB      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
QY      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114
DB      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 19
US-08-887-352B-22
; Sequence 22, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
; TITLE OF INVENTION: Improving Polypeptides
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESS: Genentech, Inc.
; STREET: 1 DNA way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P1123
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 22:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 248 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
US-08-887-352B-22

Query Match      100.0%; Score 625; DB 2; Length 248;
Best Local Similarity 100.0%; Pred. No. 1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
DB      1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSNMIRQAPGKGLFWASITYDGSITNY 60
QY      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114
DB      61 NPSVKRITITSRDSSKNTFTYLNQNSLRAPDTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 20
US-09-109-207C-22
```

; Sequence 22, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; CURRENT FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 22
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-248
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-109-207C-22

Query Match 100.0%; Score 625; DB 3; Length 248;
Best Local Similarity 100.0%; Pred. No. 1.1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 21
US-09-296-005-22
; Sequence 22, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1X
; CURRENT APPLICATION NUMBER: US/09/296,005
; CURRENT FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 22
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-248
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-296-005-22

Query Match 100.0%; Score 625; DB 3; Length 248;
Best Local Similarity 100.0%; Pred. No. 1.1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 22
US-09-920-171-22
; Sequence 22, Application US/09920171

; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 22
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-920-171-22

Query Match 100.0%; Score 625; DB 4; Length 248;
Best Local Similarity 100.0%; Pred. No. 1.1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 23
US-09-716-028-22
; Sequence 22, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 22
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-248
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-716-028-22

Query Match 100.0%; Score 625; DB 4; Length 248;
Best Local Similarity 100.0%; Pred. No. 1.1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSGYSWMNIRQAPGKLEWVASITYDGSSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAEDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 24
US-10-113-996-22
; Sequence 22, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 22
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: sfv sequence derived from MAE11
US-10-113-996-22

Query Match 100.0%; Score 625; DB 4; Length 248;
Best Local Similarity 100.0%; Pred. No. 1.1e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVDPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVOLVESGGGLVDPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWVASITTDGSTNY 60
61 NPSTVKRITTSRDSDSKNTFTYQNMNSLRADTAVYYCARSGSHYFGHMFPAVMGQG 114
DB 61 NPSTVKRITTSRDSDSKNTFTYQNMNSLRADTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 25
US-08-887-352B-14
; Sequence 14, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P1123
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489

TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 14:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 451 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
US-08-887-352B-14

Query Match 100.0%; Score 625; DB 2; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVDPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVOLVESGGGLVDPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWVASITTDGSTNY 60
61 NPSTVKRITTSRDSDSKNTFTYQNMNSLRADTAVYYCARSGSHYFGHMFPAVMGQG 114
DB 61 NPSTVKRITTSRDSDSKNTFTYQNMNSLRADTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 26
US-08-887-352B-16
; Sequence 16, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P1123
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 16:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 451 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
US-08-887-352B-16

Query Match 100.0%; Score 625; DB 2; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVDPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWVASITTDGSTNY 60
DB 1 EVOLVESGGGLVDPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWVASITTDGSTNY 60
61 NPSTVKRITTSRDSDSKNTFTYQNMNSLRADTAVYYCARSGSHYFGHMFPAVMGQG 114
DB 61 NPSTVKRITTSRDSDSKNTFTYQNMNSLRADTAVYYCARSGSHYFGHMFPAVMGQG 114

RESULT 27
US-08-466-151-65
; Sequence 65, Application US/08466151
; Patent No. 6037453
; GENERAL INFORMATION:
; APPLICANT: Jardiou, Paula M.
; APPLICANT: Presta, Leonard G.
; TITLE OF INVENTION: Immunoglobulin Variants
; NUMBER OF SEQUENCES: 65
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 MB floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/466,151
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/466163
; FILING DATE: 06-Jun-1995
; APPLICATION NUMBER: 08/405617
; FILING DATE: 15-MAR-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/185899
; FILING DATE: 26-JAN-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/879495
; FILING DATE: 07-MAY-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/744768
; FILING DATE: 14-AUG-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P0718P2C1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 65:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 451 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; US-08-466-151-65
Query Match 100.0%; Score 625; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 2,2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB 1 EVQLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDAVYYCARGSHYFGHMFAVWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDAVYYCARGSHYFGHMFAVWGOG 114
RESULT 28
US-09-109-207C-14
; Sequence 14, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardiou, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide

; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; CURRENT FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 14
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
; US-09-109-207C-14
Query Match 100.0%; Score 625; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 2,2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB 1 EVQLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDAVYYCARGSHYFGHMFAVWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDAVYYCARGSHYFGHMFAVWGOG 114
RESULT 29
US-09-109-207C-16
; Sequence 16, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardiou, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; CURRENT FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 16
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
; US-09-109-207C-16
Query Match 100.0%; Score 625; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 2,2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB 1 EVQLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
QY 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDAVYYCARGSHYFGHMFAVWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDAVYYCARGSHYFGHMFAVWGOG 114
RESULT 30
US-09-296-005-14
; Sequence 14, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardiou, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1X

```
; CURRENT APPLICATION NUMBER: US/09/296,005
; CURRENT FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 14
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-296-005-14
```

```
Query Match          100.0%; Score 625; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
```

```
QY      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
DB      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
```

```
RESULT 31
US-09-296-005-16
; Sequence 16, Application US/09296005
; Patent No. 6230957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1r
; CURRENT APPLICATION NUMBER: US/09/296,005
; CURRENT FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 16
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-296-005-16
```

```
Query Match          100.0%; Score 625; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
```

```
QY      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
DB      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
```

```
RESULT 32
US-09-920-171-14
; Sequence 14, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
```

```
; TITLE OF INVENTION: Improved Anti-1gE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 14
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-920-171-14
```

```
Query Match          100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
```

```
QY      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
DB      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
```

```
RESULT 33
US-09-920-171-16
; Sequence 16, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-1gE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 16
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-920-171-16
```

```
Query Match          100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
DB      1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITVDGSTNY 60
```

```
QY      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
DB      61 NPSTKGRITTSRDSKNTFTLQNSLRAPEDTAVYYCARSGSHYFGHMFAVWGQ 114
```

```
RESULT 34
US-09-716-028-14
; Sequence 14, Application US/09716028
; Patent No. 6723833
```

```

; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Prestea, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 14
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-716-028-14
```

```

Query Match          100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```

Qy 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
Db 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
Qy 61 NPSVKGRTITSRDSSKNTFYIQNNSLRAPDTAVYYCARGSHYFGHMHPAVWGQG 114
Db 61 NPSVKGRTITSRDSSKNTFYIQNNSLRAPDTAVYYCARGSHYFGHMHPAVWGQG 114
```

RESULT 35

```

US-09-716-028-16
; Sequence 16, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Prestea, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 16
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-716-028-16
```

```

Query Match          100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```

Qy 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
Db 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
```

```

Qy 61 NPSVKGRTITSRDSSKNTFYIQNNSLRAPDTAVYYCARGSHYFGHMHPAVWGQG 114
Db 61 NPSVKGRTITSRDSSKNTFYIQNNSLRAPDTAVYYCARGSHYFGHMHPAVWGQG 114
```

RESULT 36

```

US-10-113-996-14
; Sequence 14, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Prestea, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 14
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-10-113-996-14
```

```

Query Match          100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```

Qy 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
Db 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
Qy 61 NPSVKGRTITSRDSSKNTFYIQNNSLRAPDTAVYYCARGSHYFGHMHPAVWGQG 114
Db 61 NPSVKGRTITSRDSSKNTFYIQNNSLRAPDTAVYYCARGSHYFGHMHPAVWGQG 114
```

RESULT 37

```

US-10-113-996-16
; Sequence 16, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Prestea, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 16
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-10-113-996-16
```

```

Query Match          100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.2e-53;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```

Qy 1 EVOLVESGGGLVOPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASITFDGSTNY 60
```

Db 1 EVQLVESGGGLVQPGGSLRLSCAVSGYSITSGYSMMWIRQAPGKGLEWVASITTDSTNY 60
QY 61 NPSVKGRITISRDDSKNTFYIQMNSLR AEDTAVYYCARGSHYFGHMF AVMGQG 114
Db 61 NPSVKGRITISRDDSKNTFYIQMNSLR AEDTAVYYCARGSHYFGHMF AVMGQG 114

Search completed: June 3, 2005, 12:48:20
Job time : 23 secs

SQ Sequence 114 AA;
 Query Match 100.0%; Score 625; DB 2; Length 114;
 Best Local Similarity 100.0%; Pred. No. 6.2e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLHWASITPDSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLHWASITPDSTNY 60
 QY 61 NPSVKGRTITSRDSSKNTFTYQNNSLRAEDTAVYVCARGSHYEGHMFPAWVGQ 114
 DB 61 NPSVKGRTITSRDSSKNTFTYQNNSLRAEDTAVYVCARGSHYEGHMFPAWVGQ 114
 RESULT 2
 AAB76946
 ID AAB76946 standard; protein; 114 AA.
 AC AAB76946;
 DT 17-APR-2001 (first entry)
 DE Variable heavy chain sequence of e25, e26 and e426 SEQ ID 12.
 XX Antibody; antiaesthetic; antiallergic; ophthalmological; dermatological;
 KM antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
 KM conjunctivitis; eczema; urticaria; food allergy.
 OS Synthetic.
 XX US6172213-B1.
 PN 09-JAN-2001.
 PD 30-JUN-1998; 98US-00109207.
 PF 02-JUL-1997; 97US-0051554P.
 PR (GETH) GENENTECH INC.
 PA Lowman HB, Presta LG, Jardieu PM, Lowe J;
 PI WPI; 2001-122353/13.
 DR New nucleic acid encoding anti-immunoglobulin E antibody with improved
 PT properties, produced by substituting aspartyl residues in unimproved
 PT immunoglobulin E prone to isomerization by other residues by affinity
 PT maturation with phage display.
 XX Disclosure; Fig 2; 87pp; English.
 PS This invention relates to a nucleotide sequence encoding an antibody with
 CC improved anti-IgE antibody activity. The antibody has improved action due
 CC to a process comprising, a) identifying aspartyl residues prone to
 CC isomerization in unimproved anti-IgE (immunoglobulin E) antibody; b)
 CC substituting alternative residues to create candidate molecules, and c)
 CC selecting those candidate molecules which display affinity against the
 CC target molecule. Use of the antibody results in antiaesthetic;
 CC antiallergic; ophthalmological; dermatological and antiinflammatory
 CC activity. The antibodies are useful for treating IgE-mediated disorders
 CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
 CC food allergies. The mutant antibodies produced by the above mentioned
 CC nucleic acid may also be used as affinity purification agents and in
 CC diagnostic assays for detecting the expression of an antigen of interest
 CC in specific cell, tissues or serum. Amino acid sequences AAB76936-
 CC AAB76960 represent fragments of anti-IgE antibodies of the invention.
 CC Polynucleotide sequence AAB76953 represents an expression plasmid used in
 CC the course of the invention, and oligonucleotides AAB769254 - AAB769271 are
 CC used in the generation of affinity improved anti-IgE antibodies
 SQ Sequence 114 AA;

Query Match 100.0%; Score 625; DB 4; Length 114;
 Best Local Similarity 100.0%; Pred. No. 6.2e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLHWASITPDSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLHWASITPDSTNY 60
 QY 61 NPSVKGRTITSRDSSKNTFTYQNNSLRAEDTAVYVCARGSHYEGHMFPAWVGQ 114
 DB 61 NPSVKGRTITSRDSSKNTFTYQNNSLRAEDTAVYVCARGSHYEGHMFPAWVGQ 114
 RESULT 3
 ADN07033
 ID ADN07033 standard; protein; 114 AA.
 AC ADN07033;
 DT 01-JUL-2004 (first entry)
 DE Anti-IgE antibody e25, e26 and e426 variable heavy chain domain (VH).
 XX Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
 KM therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
 KM allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
 KM variable heavy chain domain; VH.
 OS Unidentified.
 XX US6723833-B1.
 PN 20-APR-2004.
 PD 17-NOV-2000; 2000US-00716028.
 PF 02-JUL-1997; 97US-0051554P.
 PR 30-JUN-1998; 98US-00109207.
 XX (GETH) GENENTECH INC.
 PA Lowman HB, Presta LG, Jardieu PM, Lowe J;
 PI WPI; 2004-326922/30.
 DR New composition of an improved anti-IgE antibody or IgE binding fragment,
 PT useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
 PT conjunctivitis, eczema, urticaria or food allergies.
 XX Disclosure; SEQ ID NO 12; 89pp; English.
 PS The invention relates to therapeutic compositions comprising anti-IgE
 CC antibody or IgE binding fragment in combination with an adjunct
 CC immunosuppressive agent. The composition is useful for treating IgE-
 CC mediated disorders. The disorders include atopic allergy associated with
 CC anaphylactic hypersensitivity and asthma, allergic rhinitis and
 CC conjunctivitis, eczema, urticaria and food allergies. The present
 CC sequence is an anti-IgE antibody variable heavy chain domain (VH).
 XX Sequence 114 AA;
 SQ Query Match 100.0%; Score 625; DB 8; Length 114;
 Best Local Similarity 100.0%; Pred. No. 6.2e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASITTDGSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASITTDGSTNY 60
 QY 61 NPSYKGRITTSRDSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWVGQG 114
 DB 61 NPSYKGRITTSRDSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWVGQG 114

RESULT 4

AAW95665
 ID AAW95665 standard; protein; 229 AA.

AAW95665;
 AC AAW95665;
 XX 08-JUN-1999 (first entry)

DE Mus musculus anti-IgE e26 variable heavy chain Fab fragment.

XX Variable heavy chain; Fab fragment; antibody; anti-IgE; reduction;
 KM histamine; production; hypersensitivity; allergen; anaphylaxis;
 KM atopic allergy; asthma; allergic rhinitis; conjunctivitis; hay fever;
 KM eczema; anaphylactic shock; urticaria; IgE; prevention.

XX Mus musculus.

XX WO9901556-A2.

XX 14-JAN-1999.

XX 30-JUN-1998; 98WO-US013410.

XX 02-JUL-1997; 97US-00887352.

XX (GETH) GENENTECH INC.

XX Lowman HB, Presta LG, Jardieu PM, Lowe J;

XX WPI; 1999-106057/09.

XX DR Improving affinity of polypeptides, particularly anti-IgE antibodies - by
 PT identifying aspartyl residues which undergo isomerisation and
 PT substituting alternative residues and screening for affinity against the
 PT target.

XX PS Disclosure; Page 100-101; 129pp; English.

XX CC The sequence is that of the variable heavy Fab fragment of e26. It was
 CC used as part of a method to improve the affinity of anti-IgE antibodies
 CC such as e26 and e27. The e26 and e27 antibodies can be used for reducing
 CC or preventing IgE mediated production of histamine in a mammal. They can
 CC be used for treating a disorder mediated by IgE such as hypersensitivity,
 CC atopic allergy, asthma, allergic rhinitis, conjunctivitis, hay fever,
 CC eczema, anaphylactic shock and urticaria. The antibodies can also be used
 CC for affinity purification, detection and diagnosis

XX SQ Sequence 229 AA;

Query Match 100.0%; Score 625; DB 2; Length 229;
 Best Local Similarity 100.0%; Pred. No. 1.4e-49;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASITTDGSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASITTDGSTNY 60
 QY 61 NPSYKGRITTSRDSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWVGQG 114
 DB 61 NPSYKGRITTSRDSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWVGQG 114

RESULT 5
 AAB76954

ID AAB76954 standard; protein; 229 AA.
 AC AAB76954;
 XX 17-APR-2001 (first entry)

DE Variable heavy chain Fab fragment of e26 SEQ ID 20.

XX Antibody; antiaesthetic; antiallergic; ophthalmological; dermatological;
 KM antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
 KM conjunctivitis; eczema; urticaria; food allergy.

XX Synthetic.

XX US6172213-B1.

XX 09-JAN-2001.

XX 30-JUN-1998; 98US-00109207.

XX 02-JUL-1997; 97US-0051554P.

XX (GETH) GENENTECH INC.

XX Lowman HB, Presta LG, Jardieu PM, Lowe J;

XX WPI; 2001-122353/13.

XX DR New nucleic acid encoding anti-immunoglobulin E antibody with improved
 XX PT properties, produced by substituting aspartyl residues in unimproved
 XX PT immunoglobulin E prone to isomerization by other residues by affinity
 XX PT maturation with phage display.

XX PS Disclosure; Fig 13; 87pp; English.

XX CC This invention relates to a nucleotide sequence encoding an antibody with
 CC improved anti-IgE antibody activity. The antibody has improved action due
 CC to a process comprising, a) identifying aspartyl residues prone to
 CC isomerisation in unimproved anti-IgE (immunoglobulin E) antibody; b)
 CC substituting alternative residues to create candidate molecules, and c)
 CC selecting those candidate molecules which display affinity against the
 CC target molecule. Use of the antibody results in antiaesthetic;
 CC antiallergic; ophthalmological; dermatological and antiinflammatory
 CC activity. The antibodies are useful for treating IgE-mediated disorders
 CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
 CC food allergies. The mutant antibodies produced by the above mentioned
 CC nucleic acids may also be used as affinity purification agents and in
 CC diagnostic assays for detecting the expression of an antigen of interest
 CC in specific cell, tissues or serum. Amino acid sequences AAB76936-
 CC AAB76960 represent fragments of anti-IgE antibodies of the invention.
 CC Polynucleotide sequence AAF69253 represents an expression plasmid used in
 CC the course of the invention, and oligonucleotides AAF69254 - AAF69271 are
 CC used in the generation of affinity improved anti-IgE antibodies

XX SQ Sequence 229 AA;

Query Match 100.0%; Score 625; DB 4; Length 229;
 Best Local Similarity 100.0%; Pred. No. 1.4e-49;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASITTDGSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASITTDGSTNY 60
 QY 61 NPSYKGRITTSRDSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWVGQG 114
 DB 61 NPSYKGRITTSRDSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWVGQG 114

RESULT 6
 ADN07041
 ID ADN07041 standard; protein; 229 AA.

AC ADN07041;
XX
XX 01-JUL-2004 (first entry)
XX
XX
DE Anti-IgE antibody e26 variable heavy (VH) Fab fragment.
XX
XX
XX Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
XX therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
XX allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
XX variable heavy chain; VH.
XX
XX Unidentified.
XX
XX US6723833-B1.
XX
XX 20-APR-2004.
XX
XX 17-NOV-2000; 2000US-00716028.
XX
XX 02-JUL-1997; 97US-0051554P.
XX 30-JUN-1998; 98US-00109207.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI, 2004-326922/30.
XX
XX New composition of an improved anti-IgE antibody or IgE binding fragment,
XX useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
XX conjunctivitis, eczema, urticaria or food allergies.
XX
XX Claim 7; SEQ ID NO 20; 89pp; English.
XX
XX The invention relates to therapeutic compositions comprising anti-IgE
XX antibody or IgE binding fragment in combination with an adjunct
XX immunosuppressive agent. The composition is useful for treating IgE-
XX mediated disorders. The disorders include atopic allergy associated with
XX anaphylactic hypersensitivity and asthma, allergic rhinitis and
XX conjunctivitis, eczema, urticaria and food allergies. The present
XX sequence is an anti-IgE antibody variable heavy chain (VH) Fab fragment.
XX
XX Sequence 229 AA;
SQ
Query Match 100.0%; Score 625; DB 8; Length 229;
Best Local Similarity 100.0%; Pred. No. 1.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMMIRQAPGKGLEWVASITTDSTNY 60
DB 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMMIRQAPGKGLEWVASITTDSTNY 60
QY 61 NPSVKGRITTSRDSKNTFYLOMNSLRADPTAVYYCARSGHYGHHMFPAWVGQ 114
DB 61 NPSVKGRITTSRDSKNTFYLOMNSLRADPTAVYYCARSGHYGHHMFPAWVGQ 114
RESULT 7
ADN07067
ID ADN07067 standard; protein; 229 AA.
XX
XX ADN07067;
XX
XX 01-JUL-2004 (first entry)
XX
XX F(ab) -phage p426 DNA encoded anti-IgE antibody e5 heavy chain.
XX
XX Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
XX therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
XX allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy; p426.
XX
XX Unidentified.
XX

PN US6723833-B1.
XX
XX 20-APR-2004.
XX
XX 17-NOV-2000; 2000US-00716028.
XX
XX 02-JUL-1997; 97US-0051554P.
XX 30-JUN-1998; 98US-00109207.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI, 2004-326922/30.
XX N-P-SDB; ADN07022.
XX
XX New composition of an improved anti-IgE antibody or IgE binding fragment,
XX useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
XX conjunctivitis, eczema, urticaria or food allergies.
XX
XX Example 4; Fig 10B-10C; 89pp; English.
XX
XX The invention relates to therapeutic compositions comprising anti-IgE
XX antibody or IgE binding fragment in combination with an adjunct
XX immunosuppressive agent. The composition is useful for treating IgE-
XX mediated disorders. The disorders include atopic allergy associated with
XX anaphylactic hypersensitivity and asthma, allergic rhinitis and
XX conjunctivitis, eczema, urticaria and food allergies. The present
XX sequence is a F(ab)-phage p426 DNA encoded anti-IgE antibody e5 heavy
XX chain. This sequence is used in the exemplification of the invention.
XX
XX Sequence 229 AA;
SQ
Query Match 100.0%; Score 625; DB 8; Length 229;
Best Local Similarity 100.0%; Pred. No. 1.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMMIRQAPGKGLEWVASITTDSTNY 60
DB 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMMIRQAPGKGLEWVASITTDSTNY 60
QY 61 NPSVKGRITTSRDSKNTFYLOMNSLRADPTAVYYCARSGHYGHHMFPAWVGQ 114
DB 61 NPSVKGRITTSRDSKNTFYLOMNSLRADPTAVYYCARSGHYGHHMFPAWVGQ 114
RESULT 8
AAW95670
ID AAW95670 standard; protein; 233 AA.
XX
XX AAW95670;
XX
XX 08-JUN-1999 (first entry)
XX
XX Mus musculus anti-IgE e26 variable heavy chain F(ab)'2 fragment.
XX
XX Variable heavy chain; IgE; antibody; anti-IgE; reduction; prevention;
XX histamine; production; hypersensitivity; allergen; anaphylaxis;
XX atopic allergy; asthma; allergic rhinitis; conjunctivitis; hay fever;
XX eczema; anaphylactic shock; urticaria; F(ab)'2 fragment.
XX
XX Mus musculus.
XX
XX WO9901556-A2.
XX
XX 14-JAN-1999.
XX
XX 30-JUN-1998; 98WO-US013410.
XX 02-JUL-1997; 97US-00887352.
XX
XX (GETH) GENENTECH INC.
XX

PI Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI, 1999-106057/09.
XX
XX
PT Improving affinity of polypeptides, particularly anti-IgE antibodies - by
PT identifying aspartyl residues which undergo isomerization and
PT substituting alternative residues and screening for affinity against the
PT target.
PS Disclosure; Page 105; 129pp; English.
XX
XX The sequence is that of the variable heavy chain F(ab)'2 fragment of e26.
CC It was used as part of a method to improve the affinity of anti-IgE
CC antibodies such as e26 and e27. The e26 and e27 antibodies can be used
CC for reducing or preventing IgE mediated production of histamine in a
CC mammal. They can be used for treating a disorder mediated by IgE such as
CC hypersensitivity, atopic allergy, asthma, allergic rhinitis,
CC conjunctivitis, hay fever, eczema, anaphylactic shock and urticaria. The
CC antibodies can also be used for affinity purification, detection and
CC diagnosis
XX
SQ Sequence 233 AA:
Query Match 100.0%; Score 625; DB 2; Length 233;
Best Local Similarity 100.0%; Pred. No. 1.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITDGSITNY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITDGSITNY 60
QY 61 NPSYKGRITTSRSDSKNTFTYLNQNSLRAPDAVYTCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITTSRSDSKNTFTYLNQNSLRAPDAVYTCARGSHYFGHMFPAWVGQ 114
DE Variable heavy chain F(ab)'2 fragment of e26 SEQ ID 25.
XX
XX Antibody; antiaesthetic; antiallergic; ophthalmological; dermatological;
XX antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
XX conjunctivitis; eczema; urticaria; food allergy.
XX Synthetic.
XX
XX US6172213-B1.
XX
XX 09-JAN-2001.
XX
XX 30-JUN-1998; 98US-00109207.
XX
XX 02-JUL-1997; 97US-0051554P.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI, 2001-122353/13.
XX
XX New-nucleic acid encoding anti-immunoglobulin E antibody with improved
XX properties, produced by substituting aspartyl residues in unimproved
XX immunoglobulin E prone to isomerization by other residues by affinity
XX maturation with phage display.
XX
XX Disclosure; Fig 15; 87pp; English.
XX

CC This invention relates to a nucleotide sequence encoding an antibody with
CC improved anti-IgE antibody activity. The antibody has improved action due
CC to a process comprising, a) identifying aspartyl residues prone to
CC isomerization in unimproved anti-IgE (immunoglobulin E) antibody; b)
CC substituting alternative residues to create candidate molecules, and c)
CC selecting those candidate molecules which display affinity against the
CC target molecule. Use of the antibody results in antiaesthetic;
CC antiallergic; ophthalmological; dermatological and antiinflammatory
CC activity. The antibodies are useful for treating IgE-mediated disorders
CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
CC food allergies. The mutant antibodies produced by the above mentioned
CC nucleic acids may also be used as affinity purification agents and in
CC diagnostic assays for detecting the expression of an antigen of interest
CC in specific cell, tissues or serum. Amino acid sequences AAB76936-
CC AAB76960 represent fragments of anti-IgE antibodies of the invention.
CC Polynucleotide sequence AAB69253 represents an expression plasmid used in
CC the course of the invention, and oligonucleotides AAB69254 - AAB69271 are
CC used in the generation of affinity improved anti-IgE antibodies
XX
SQ Sequence 233 AA:
Query Match 100.0%; Score 625; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 1.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITDGSITNY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASITDGSITNY 60
QY 61 NPSYKGRITTSRSDSKNTFTYLNQNSLRAPDAVYTCARGSHYFGHMFPAWVGQ 114
DB 61 NPSYKGRITTSRSDSKNTFTYLNQNSLRAPDAVYTCARGSHYFGHMFPAWVGQ 114
DE Anti-IgE antibody e26 variable heavy (VH) F(ab)'2 fragment.
XX
XX Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
XX therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
XX allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
XX variable heavy chain; VH.
XX
XX Undentified.
XX
XX US6723833-B1.
XX
XX 20-APR-2004.
XX
XX 17-NOV-2000; 2000US-00716028.
XX
XX 02-JUL-1997; 97US-0051554P.
XX
XX 30-JUN-1998; 98US-00109207.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI, 2004-326922/30.
XX
XX New composition of an improved anti-IgE antibody or IgE binding fragment,
XX useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
XX conjunctivitis, eczema, urticaria or food allergies.
XX
XX Claim 7; SEQ ID NO 25; 89pp; English.
XX
XX The invention relates to therapeutic compositions comprising anti-IgE
CC

CC antibody or IgE binding fragment in combination with an adjuvant
 CC immunosuppressive agent. The composition is useful for treating IgE-
 CC mediated disorders. The disorders include atopic allergy associated with
 CC anaphylactic hypersensitivity and asthma, allergic rhinitis and
 CC conjunctivitis, eczema, urticaria and food allergies. The present
 CC sequence is an anti-IgE antibody variable heavy chain (VH) F(ab)' 2
 CC fragment.

XX
 XX Sequence 233 AA;

Query Match 100.0%; Score 625; DB 8; Length 233;
 Best Local Similarity 100.0%; Pred. No. 1.4e-49;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITGYSWMNIRQAPKGLFWASITVDGSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITGYSWMNIRQAPKGLFWASITVDGSTNY 60
 QY 61 NPSVKGRITTSRDSSKNTFYLNMSLRADTAVYYCARSGSHYFGHMFPAWGQG 114
 DB 61 NPSVKGRITTSRDSSKNTFYLNMSLRADTAVYYCARSGSHYFGHMFPAWGQG 114

RESULT 11

AAW95667 standard; protein; 248 AA.

AAW95667;

08-JUN-1999 (first entry)

Mus musculus anti-IgE e26 sFv fragment.

XX sFv fragment; IgE; antibody; anti-IgE; reduction; prevention; histamine;
 KM production; hypersensitivity; allergen; anaphylaxis; atopic allergy;
 KM asthma; allergic rhinitis; conjunctivitis; hay fever; eczema;
 KM anaphylactic shock; urticaria.

XX Mus musculus.

XX WO9901556-A2.

XX 14-JAN-1999.

XX 30-JUN-1998; 98WO-US013410.

XX 02-JUL-1997; 97US-00887352.

XX (GETH) GENENTECH INC.

XX Lowman HB, Preeta LG, Jardieu PM, Lowe J;

XX WPI; 1999-106057/09.

XX Improving affinity of polypeptides, particularly anti-IgE antibodies - by
 PT identifying aspartyl residues which undergo isomerization and
 PT substituting alternative residues and screening for affinity against the
 PT target.

XX Disclosure; Page 102-103; 123pp; English.

XX The sequence is that of the e26 sFv fragment. It was used as part of a
 CC method to improve the affinity of anti-IgE antibodies such as e26 and
 CC e27. The e26 and e27 antibodies can be used for reducing or preventing
 CC IgE mediated production of histamine in a mammal. They can be used for
 CC treating a disorder mediated by IgE such as hypersensitivity, atopic
 CC allergy, asthma, allergic rhinitis, conjunctivitis, hay fever, eczema,
 CC anaphylactic shock and urticaria. The antibodies can also be used for
 CC affinity purification, detection and diagnosis

XX Sequence 248 AA;

Query Match 100.0%; Score 625; DB 2; Length 248;

Best Local Similarity 100.0%; Pred. No. 1.5e-49;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITGYSWMNIRQAPKGLFWASITVDGSTNY 60
 DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITGYSWMNIRQAPKGLFWASITVDGSTNY 60

QY 61 NPSVKGRITTSRDSSKNTFYLNMSLRADTAVYYCARSGSHYFGHMFPAWGQG 114
 DB 61 NPSVKGRITTSRDSSKNTFYLNMSLRADTAVYYCARSGSHYFGHMFPAWGQG 114

RESULT 12

AAW76956 standard; protein; 248 AA.

AAW76956;

17-APR-2001 (first entry)

SFv fragment of e26 SEQ ID 22.

XX Antibody; antiasthmatic; antiallergic; ophthalmological; dermatological;
 KM antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
 KM conjunctivitis; eczema; urticaria; food allergy.

XX Synthetic.

XX US6172213-B1.

XX 09-JAN-2001.

XX 30-JUN-1998; 98US-00109207.

XX 02-JUL-1997; 97US-0051554P.

XX (GETH) GENENTECH INC.

XX Lowman HB, Preeta LG, Jardieu PM, Lowe J;

XX WPI; 2001-122353/13.

XX New nucleic acid encoding anti-immunoglobulin E antibody with improved
 PT properties, produced by substituting aspartyl residues in unimproved
 PT immunoglobulin E prone to isomerization by other residues by affinity
 PT maturation with phage display.

XX Disclosure; Fig 14; 87pp; English.

XX This invention relates to a nucleotide sequence encoding an antibody with
 CC improved anti-IgE antibody activity. The antibody has improved action due
 CC to a process comprising, a) identifying aspartyl residues prone to
 CC isomerization in unimproved anti-IgE (immunoglobulin E) antibody; b)
 CC substituting alternative residues to create candidate molecules, and c)
 CC selecting those candidate molecules which display affinity against the
 CC target molecule. Use of the antibody results in antiasthmatic;
 CC antiallergic; ophthalmological; dermatological and antiinflammatory
 CC activity. The antibodies are useful for treating IgE-mediated disorders
 CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
 CC food allergies. The mutant antibodies produced by the above mentioned
 CC nucleic acids may also be used as affinity purification agents and in
 CC diagnostic assays for detecting the expression of an antigen of interest
 CC in specific cell, tissues or serum. Amino acid sequences AAW76936-
 CC AAW76960 represent fragments of anti-IgE antibodies of the invention.
 CC Polynucleotide sequence AAF69253 represents an expression plasmid used in
 CC the course of the invention, and oligonucleotides AAF69254 - AAF69271 are
 CC used in the generation of affinity improved anti-IgE antibodies

XX Sequence 248 AA;

Query Match 100.0%; Score 625; DB 4; Length 248;
 Best Local Similarity 100.0%; Pred. No. 1.5e-49;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	EVOLVESSGGGLVOPGSGSLRLSCAVSGYSITSGYSNNMTIROAPGKGLEWVASITTDGSGTNY	60
Db	1	EVOLVESSGGGLVOPGSGSLRLSCAVSGYSITSGYSNNMTIROAPGKGLEWVASITTDGSGTNY	60
Qy	61	NPSSVKGRTTISRDDSKNTFFYLQNMNLSRAEDTAVVYVCARGSHYFGHMFAVWGOG	114
Db	61	NPSSVKGRTTISRDDSKNTFFYLQNMNLSRAEDTAVVYVCARGSHYFGHMFAVWGOG	114
RESULT 13			
ID	ADN07043	standard; protein; 248 AA.	
AC	ADN07043;		
XX	ADN07043;		
DT	01-JUL-2004	(first entry)	
XX			
DE	Anti-IGE antibody e26 sfv fragment.		
XX			
KM	Anti-IGE antibody; immunosuppressive agent; IGE-mediated disorder;		
KW	therapy; atopic allergy; anaphylactic hypersensitivity; asthma;		
XX	allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy.		
OS	unidentified.		
XX			
PN	US6723833-B1.		
XX			
PD	20-APR-2004.		
XX			
PF	17-NOV-2000; 2000US-00716028.		
XX			
PR	02-JUL-1997; 97US-0051554P.		
PR	30-JUN-1998; 98US-00109207.		
PA	(GETH) GENENTECH INC.		
XX			
PI	Lowman HB, Presta LG, Jardieu PM, Lowe J;		
XX			
DR	WPI; 2004-326922/30.		
PT	New composition of an improved anti-IGE antibody or IGE binding fragment,		
PT	useful for treating IGE-mediated diseases, e.g. atopic allergy, asthma,		
PT	conjunctivitis, eczema, urticaria or food allergies.		
PS	Claim 7; SEQ ID NO 22; 89pp; English.		
XX			
XX	The invention relates to therapeutic compositions comprising anti-IGE		
CC	antibody or IGE binding fragment in combination with an adjunct		
CC	immunosuppressive agent. The composition is useful for treating IGE-		
CC	mediated disorders. The disorders include atopic allergy associated with		
CC	anaphylactic hypersensitivity and asthma, allergic rhinitis and		
CC	conjunctivitis, eczema, urticaria and food allergies. The present		
CC	sequence is an anti-IGE antibody sfv fragment.		
XX			
SQ	Sequence 248 AA;		
Query Match	100.0%;	Score 625;	DB 8; Length 248;
Best Local Similarity	100.0%;	Pred. No. 1.5e-43;	
Matches 114;	Conservative 0;	Mismatches 0;	Indels 0; Gaps 0;
Qy	1	EVOLVESSGGGLVOPGSGSLRLSCAVSGYSITSGYSNNMTIROAPGKGLEWVASITTDGSGTNY	60
Db	1	EVOLVESSGGGLVOPGSGSLRLSCAVSGYSITSGYSNNMTIROAPGKGLEWVASITTDGSGTNY	60
Qy	61	NPSSVKGRTTISRDDSKNTFFYLQNMNLSRAEDTAVVYVCARGSHYFGHMFAVWGOG	114
Db	61	NPSSVKGRTTISRDDSKNTFFYLQNMNLSRAEDTAVVYVCARGSHYFGHMFAVWGOG	114
RESULT 14			
ID	AAW95659	standard; protein; 451 AA.	
ID	AAW95659		

```

XX AC AAW95659;
XX XX 08-JUN-1999 (first entry)
XX DE Mus musculus anti-IgE e25 full length variable heavy chain.
XX KM Heavy chain; IgE; antibody; anti-IgE; reduction; prevention; histamine;
XX KM production; hypersensitivity; allergen; anaphylaxis; atopic allergy;
XX KM asthma; allergic rhinitis; conjunctivitis; hay fever; eczema;
XX KM anaphylactic shock; urticaria.
XX OS Mus musculus.
XX SS WO9901556-A2.
XX PN 14-JAN-1999.
XX PD 30-JUN-1998; 98WO-US013410.
XX PE 02-JUL-1997; 97US-00887352.
XX PR (GETH ) GENENTECH INC.
XX PA
XX PI Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX DR WPI; 1999-106057/09.
XX PS
XX PT Improving affinity of polypeptides, particularly anti-IgE antibodies - by
XX PT identifying aspartyl residues which undergo isomerisation and
XX PT substituting alternative residues and screening for affinity against the
XX PT target.
XX PS
XX SS Disclosure; Page 92-94; 129p; English.
XX CC
XX CC The sequence is that of the full length heavy chain of e25. It was used as
XX CC part of a method to improve the affinity of anti-IgE antibodies such as
XX CC e26 and e27. The e26 and e27 antibodies can be used for reducing or
XX CC preventing IgE mediated production of histamine in a mammal. They can be
XX CC used for treating a disorder mediated by IgE such as hypersensitivity,
XX CC atopic allergy, asthma, allergic rhinitis, conjunctivitis, hay fever,
XX CC eczema, anaphylactic shock and urticaria. The antibodies can also be used
XX CC for affinity purification, detection and diagnosis
XX CC
XX SQ Sequence 451 AA;
XX
XX Query Match 100.0%; Score 625; DB 2; Length 451;
XX Best Local Similarity 100.0%; Pred. No. 2.9e-49; Mismatches 0; Gaps 0
XX Matches 114; Conservative 0; Indels 0;
XX
XX QY 1 EVOLVESGGGVOPGSGRLSCAASGVSITSGYSNMWIRQAFGKLEWVASITTDSTNY 60
XX DB 1 EVOLVESGGGVOPGSGRLSCAASGVSITSGYSNMWIRQAFGKLEWVASITTDSTNY 60
XX QY 61 NPSYKGRITTRDSDSKNTFTYIQMNSLRADTRAVYICARGSHYFGHMFPAWGGG 114
XX DB 61 NPSYKGRITTRDSDSKNTFTYIQMNSLRADTRAVYICARGSHYFGHMFPAWGGG 114
XX QY 61 NPSYKGRITTRDSDSKNTFTYIQMNSLRADTRAVYICARGSHYFGHMFPAWGGG 114
XX DB 61 NPSYKGRITTRDSDSKNTFTYIQMNSLRADTRAVYICARGSHYFGHMFPAWGGG 114
XX
XX RESULT 15 /
XX ID AAW95661
XX AC AAW95661;
XX XX 08-JUN-1999 (first entry)
XX DE Mus musculus anti-IgE e26 full length heavy chain.
XX KM Heavy chain; IgE; antibody; anti-IgE; reduction; prevention; histamine;
XX KM production; hypersensitivity; allergen; anaphylaxis; atopic allergy;
XX KM asthma; allergic rhinitis; conjunctivitis; hay fever; eczema;
XX KM anaphylactic shock; urticaria.

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XX	OS	Mus musculus.
XX	PN	W09901556-A2.
XX	PD	14-JAN-1999.
XX	PF	30-JUN-1998; 98WO-US013410.
XX	PR	02-JUL-1997; 97US-00887352.
XX	PA	(GERTH) GENENTECH INC.
XX	PI	Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX	DR	WPI; 1999-106057/09.
PT	XX	Improving affinity of polypeptides, particularly anti-IgE antibodies - by
PT	XX	identifying aspartyl residues which undergo isomerisation and
PT	XX	substituting alternative residues and screening for affinity against the
CC	XX	target.
PS	XX	Disclosure; Page 95-96; 129pp; English.
XX	XX	The sequence is that of the full length heavy chain of e26. It was used
CC	XX	as part of a method to improve the affinity of anti-IgE antibodies such
CC	XX	as e26 and e27. The e26 and e27 antibodies can be used for reducing or
CC	XX	preventing IgE mediated production of histamine in a mammal. They can be
CC	XX	used for treating a disorder mediated by IgE such as hypersensitivity,
CC	XX	atopic allergy, asthma, allergic rhinitis, conjunctivitis, hay fever,
CC	XX	eczema, anaphylactic shock and urticaria. The antibodies can also be used
CC	XX	for affinity purification, detection and diagnosis
SQ	XX	Sequence 451 AA;
Query Match	100.0%; Score 625; DB 2; Length 451;	
Best Local Similarity	100.0%; Pred. No. 2.9e+49;	
Matches 114; Conservative	0; Mismatches 0; Indels 0; Gaps 0	
OY	1 EVOLVESGGGLVQPFGSLRLSCAVSGYSITSGYSWMNTRQAPGKGLEWVASITYDSTNY 60	
Db	1 EVQLVESGGGLVQPFGSLRLSCAVSGYSITSGYSWMNTRQAPGKGLEWVASITYDSTNY 60	
OY	61 NPVSAGRTTISRDSKNTPYLQMSLRADTVAYVCARGSHYFGHWHPAWCGG 114	
Db	61 NPVSAGRITTSRDSKNTPYLQMSLRADTVAYVCARSHYFGHWHPAWCGG 114	
RESULT 16		
ID	AAy85201	
XX	AAy85201 standard; protein; 451 AA.	
AC	AAy85201;	
DT	29-JUN-2000 (first entry)	
DE	Light chain amino acid sequence of anti-human IgE antibody.	
KM	Immunoglobulin E; IgE; anti-human IgE; bispecific antibody; FCEI; FCEII;	
KW	low affinity binding receptor; high affinity binding receptor; allergy;	
OS	diagnosis; treatment; histamine release; heavy chain; prevent.	
XX	Mus sp.	
PN	US6037453-A.	
PD	14-MAR-2000.	
PE	06-JUN-1995; 95US-00466151.	
PR	14-AUG-1992; 92MO-US006860.	
PR	26-JAN-1994; 94US-00185899.	
PR	15-MAR-1995; 95US-00405617.	

XX	(GETH) GENENTECH INC.
PA	
XX	Presta LG, Jardieu PM;
PI	
XX	WPI; 2000-269913/23.
DR	
XX	New bispecific antibodies, useful for treating immunoglobulin E-mediated diseases, binds to IgE, but only when on the low affinity receptor, and to an antigen other than IgE.
PT	
PR	
XX	Claim 15; Col 73-76; 48pp; English.
PS	
XX	This sequence represents the light chain amino acid sequence of a mouse anti-human immunoglobulin E (IgE) antibody. The invention relates to a bispecific antibody that binds specifically to IgE when IgE is bound to its low affinity receptor (FcεR1), but does not bind to IgE, when IgE is bound to its high affinity receptor (FcεR2). The bispecific antibody comprises an IgE-binding arm with human framework residues of a recipient human antibody and donor murine CDR (complementarily determining region) residues, but with at least one human CDR residue replacing the analogous murine residue. The antibody also comprises an Fv that is specific for a predetermined antigen other than IgE. The antibodies work by displacing bound IgE from its receptor, or via competitive inhibition of its binding. The bispecific antibodies are used for diagnosis, treatment and prevention of allergy and other IgE-mediated diseases, also, when immobilised, for the isolation of FcεR1 from cells (for research or therapy). The bispecific antibodies of the invention do not cause granulation or release of histamine from mast cells
CC	
CC	
CC	
CC	
CC	
CC	
CC	
CC	
CC	
CC	
CC	
CC	
SQ	Sequence 451 AA:
Query Match	100.0%; Score 625; DB 3; Length 451;
Best Local Similarity	100.0%; Pred. No. 2.9e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	
QY	1 EVLVESGGGVORCGSRRLSCAVSGYSITSGSWMVROAPKGLSEVVASTTNGSTNY 60
DB	1 EVLVESGGGLVOPGSGRLSLCAVSGYSITSGSWMVROAPKGLEVVASTTNGSTNY 60
QY	61 NPSVKGRTISRDSKNTFYLOMNSILRAEDPAAVYYCARGSHYFGHMHPAVWGQG 114
DB	61 NPSVKGRTISRDSKNTFYLOMNSILRAEDPAAVYYCARGSHYFGHMHPAVWGQG 114
RESULT 17	
AAB47088	
ID	AAB47088 standard; protein; 451 AA.
XX	
AC	AAB47088;
XX	
DT	11-SEP-2003 (revised)
DT	08-MAY-2001 (first entry)
XX	
DE	Anti-IgE antibody, E26, heavy chain.
XX	
KM	Light chain; heavy chain; anti-IgE antibody; E26; transfection;
KX	green fluorescent protein; GFP; promoter; expression.
OS	Homo sapiens.
OS	Mus musculus.
OS	Chimeric.
FN	WO200104306-A1.
PD	18-JAN-2001.
XX	
PF	11-JUL-2000; 2000MO-USO18841.
XX	
PR	12-JUL-1999; 99US-0143360P.
XX	
PA	(GETH) GENENTECH INC.
XX	

PI Chisholm V, Crowley CW, Krummen LA, Meng YG;
XX WPI; 2001-138352/14.
XX
XX
PT Novel polynucleotide construct for screening and obtaining cells
PT expressing high levels of desired protein, comprises amplifiable
PT selectable gene, fluorescent protein gene and sequence encoding desired
PT product.
XX
XX
PS Disclosure; Fig 13B; 75pp; English.
XX
XX The sequences given in AAB47087-88 represent the light and heavy chains
CC of the anti-1GE antibody, E26. These sequences were expressed by the
CC construct of the invention, which comprises an amplifiable selectable
CC gene, a green fluorescent protein gene (GFP), and a selected sequence
CC encoding a desired product, which is operably linked to either the
CC amplifiable selectable gene or to the GFP gene, and to a promoter.
CC Constructs such as this, are useful for producing a desired product by
CC introduction into a suitable eukaryotic cell, culturing the resultant
CC eukaryotic cell under conditions so as to express the desired product,
CC and recovering the desired product from the culture medium. The
CC constructs are efficient for identifying and selecting for stable
CC eukaryotic cells expressing high levels of a desired product. They are
CC suitable for earlier and faster screening of transfected cells. (Updated
CC on 11-SEP-2003 to standardise OS field)
XX
SQ Sequence 451 AA;
Query Match 100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.9e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVESGGGLVQPGGSLRLSCAVGSYITSGYSMNTRAPGKGLEWVASITTDGSTNY 60
DB 1 EVQLVESGGGLVQPGGSLRLSCAVGSYITSGYSMNTRAPGKGLEWVASITTDGSTNY 60
QY 61 NPSYKGRITTSRDSKNTFYLOMNSLRAPDTAVYVCARGSHYFGHMFPAWGQG 114
DB 61 NPSYKGRITTSRDSKNTFYLOMNSLRAPDTAVYVCARGSHYFGHMFPAWGQG 114
Db
RESULT 18
AAB76948
ID AAB76948 standard; protein; 451 AA.
XX
XX AAB76948;
AC
XX
XX 17-APR-2001 (first entry)
DT
XX
XX Full length heavy chain sequence of e25 SEQ ID 14.
DE
XX Antibody; antiaesthetic; antiallergic; ophthalmological; dermatological;
XX antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
XX conjunctivitis; eczema; urticaria; food allergy.
XX
XX Synthetic.
OS
XX US6172213-B1.
XX
XX 09-JAN-2001.
PD
XX 30-JUN-1998; 98US-00109207.
PF
XX 02-JUL-1997; 97US-0051554P.
PR
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
PI
XX WPI; 2001-122353/13.
DR
XX New nucleic acid encoding anti-immunoglobulin E antibody with improved
PT properties, produced by substituting aspartyl residues in unimproved
PT

PT immunoglobulin E prone to isomerization by other residues by affinity
PT maturation with phase display.
XX
XX
XX
PS Disclosure; Fig 12; 87pp; English.
XX
XX This invention relates to a nucleotide sequence encoding an antibody with
CC improved anti-1GE antibody activity. The antibody has improved action due
CC to a process comprising, a) identifying aspartyl residues prone to
CC isomerization in unimproved anti-1GE (immunoglobulin E) antibody; b)
CC substituting alternative residues to create candidate molecules, and c)
CC selecting those candidate molecules which display affinity against the
CC target molecule. Use of the antibody results in antiaesthetic;
CC antiallergic; ophthalmological; dermatological and antiinflammatory
CC activity. The antibodies are useful for treating 1GE-mediated disorders
CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
CC food allergies. The mutant antibodies produced by the above mentioned
CC nucleic acids may also be used as affinity purification agents and in
CC diagnostic assays for detecting the expression of an antigen of interest
CC in specific cell, tissues or serum. Amino acid sequences AAB76936-
CC AAB76960 represent fragments of anti-1GE antibodies of the invention.
CC Polynucleotide sequence AAF69253 represents an expression plasmid used in
CC the course of the invention, and oligonucleotides AAF69254 - AAF69271 are
CC used in the generation of affinity improved anti-1GE antibodies
XX
SQ Sequence 451 AA;
Query Match 100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.9e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVESGGGLVQPGGSLRLSCAVGSYITSGYSMNTRAPGKGLEWVASITTDGSTNY 60
DB 1 EVQLVESGGGLVQPGGSLRLSCAVGSYITSGYSMNTRAPGKGLEWVASITTDGSTNY 60
QY 61 NPSYKGRITTSRDSKNTFYLOMNSLRAPDTAVYVCARGSHYFGHMFPAWGQG 114
DB 61 NPSYKGRITTSRDSKNTFYLOMNSLRAPDTAVYVCARGSHYFGHMFPAWGQG 114
Db
RESULT 19
AAB76950
ID AAB76950 standard; protein; 451 AA.
XX
XX AAB76950;
AC
XX
XX 17-APR-2001 (first entry)
DT
XX
XX Full length heavy chain sequence of e26 SEQ ID 16.
DE
XX Antibody; antiaesthetic; antiallergic; ophthalmological; dermatological;
XX antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
XX conjunctivitis; eczema; urticaria; food allergy.
XX
XX Synthetic.
OS
XX US6172213-B1.
XX
XX 09-JAN-2001.
PD
XX 30-JUN-1998; 98US-00109207.
PF
XX 02-JUL-1997; 97US-0051554P.
PR
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
PI
XX WPI; 2001-122353/13.
DR
XX New nucleic acid encoding anti-immunoglobulin E antibody with improved
PT properties, produced by substituting aspartyl residues in unimproved
PT immunoglobulin E prone to isomerization by other residues by affinity
PT maturation with phase display.
PT

XX Claim 2; Fig 12; 87pp; English.
XX
XX This invention relates to a nucleotide sequence encoding an antibody with
XX improved anti-IGE antibody activity. The antibody has improved action due
XX to a process comprising, a) identifying aspartyl residues prone to
XX isomerization in unimproved anti-IGE (immunoglobulin E) antibody; b)
XX substituting alternative residues to create candidate molecules; and c)
XX selecting those candidate molecules which display affinity against the
XX target molecule. Use of the antibody results in antiasthmatic;
XX anti-allergic; ophthalmological; dermatological and anti-inflammatory
XX activity. The antibodies are useful for treating IGE-mediated disorders
XX such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
XX food allergies. The mutant antibodies produced by the above mentioned
XX nucleic acids may also be used as affinity purification agents and in
XX diagnostic assays for detecting the expression of an antigen of interest
XX in a specific cell, tissues or serum. Amino acid sequences AAB76936-
XX AAB76960 represent fragments of anti-IGE antibodies of the invention.
XX Polynucleotide sequence AAF69253 represents an expression plasmid used in
XX the course of the invention, and oligonucleotides AAF69254 - AAF69271 are
XX used in the generation of affinity improved anti-IGE antibodies
XX
XX Sequence 451 AA;

Query Match 100.0%; Score 625; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.9e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSSGGGLVOPGSLRLSCAVSGYSITSGYSNMIRQAPGKLEWVASITPDGSTNY 60
DB 1 EVOLVSSGGGLVOPGSLRLSCAVSGYSITSGYSNMIRQAPGKLEWVASITPDGSTNY 60
QY 61 NPSVKGRITISRDSKNTFTYLOMNSLRADTAVYVCARGSHYFGHMFPAWVGQ 114
DB 61 NPSVKGRITISRDSKNTFTYLOMNSLRADTAVYVCARGSHYFGHMFPAWVGQ 114

RESULT 20
ADN07037

ID ADN07037 standard; protein; 451 AA.

XX AC ADN07037;

XX DT 01-JUL-2004 (first entry)

XX DE Anti-IGE antibody e26 full length variable light chain (VH) .

XX KW Anti-IGE antibody; immunosuppressive agent; IGE-mediated disorder;
XX KW therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
XX KW allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
XX KW variable heavy chain; VH.
XX
XX Unidentified.

XX OS

XX PN US6723833-B1.

XX PD 20-APR-2004.

XX PF 17-NOV-2000; 2000US-00716028.

XX PR 02-JUL-1997; 97US-0051554P.

XX PR 30-JUN-1998; 98US-00109207.

XX PA (GETH) GENENTECH INC.

XX PI Lowman HB, Presta LG, Jardieu PM, Lowe J;

XX DR WPI; 2004-326922/30.

XX PT New composition of an improved anti-IGE antibody or IGE binding fragment,
XX PT useful for treating IGE-mediated diseases, e.g. atopic allergy, asthma,
XX PT conjunctivitis, eczema, urticaria or food allergies.

PS Claim 1; SEQ ID NO 16; 89pp; English.

XX The invention relates to therapeutic compositions comprising anti-IGE
XX antibody or IGE binding fragment in combination with an adjunct
XX immunosuppressive agent. The composition is useful for treating IGE-
XX mediated disorders. The disorders include atopic allergy associated with
XX anaphylactic hypersensitivity and asthma, allergic rhinitis and
XX conjunctivitis, eczema, urticaria and food allergies. The present
XX sequence is an anti-IGE antibody variable heavy chain domain (VH) .

XX
XX Sequence 451 AA;

Query Match 100.0%; Score 625; DB 8; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.9e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSSGGGLVOPGSLRLSCAVSGYSITSGYSNMIRQAPGKLEWVASITPDGSTNY 60
DB 1 EVOLVSSGGGLVOPGSLRLSCAVSGYSITSGYSNMIRQAPGKLEWVASITPDGSTNY 60
QY 61 NPSVKGRITISRDSKNTFTYLOMNSLRADTAVYVCARGSHYFGHMFPAWVGQ 114
DB 61 NPSVKGRITISRDSKNTFTYLOMNSLRADTAVYVCARGSHYFGHMFPAWVGQ 114

RESULT 21
ADN07035

ID ADN07035 standard; protein; 451 AA.

XX AC ADN07035;

XX DT 01-JUL-2004 (first entry)

XX DE Anti-IGE antibody e25 full length variable light chain (VH) .

XX KW Anti-IGE antibody; immunosuppressive agent; IGE-mediated disorder;
XX KW therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
XX KW allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
XX KW variable heavy chain; VH.
XX
XX Unidentified.

XX OS

XX PN US6723833-B1.

XX PD 20-APR-2004.

XX PF 17-NOV-2000; 2000US-00716028.

XX PR 02-JUL-1997; 97US-0051554P.

XX PR 30-JUN-1998; 98US-00109207.

XX PA (GETH) GENENTECH INC.

XX PI Lowman HB, Presta LG, Jardieu PM, Lowe J;

XX DR WPI; 2004-326922/30.

XX PT New composition of an improved anti-IGE antibody or IGE binding fragment,
XX PT useful for treating IGE-mediated diseases, e.g. atopic allergy, asthma,
XX PT conjunctivitis, eczema, urticaria or food allergies.

XX PS Disclosure, SEQ ID NO 14; 89pp; English.

XX The invention relates to therapeutic compositions comprising anti-IGE
XX antibody or IGE binding fragment in combination with an adjunct
XX immunosuppressive agent. The composition is useful for treating IGE-
XX mediated disorders. The disorders include atopic allergy associated with
XX anaphylactic hypersensitivity and asthma, allergic rhinitis and
XX conjunctivitis, eczema, urticaria and food allergies. The present
XX sequence is an anti-IGE antibody variable heavy chain domain (VH) .
XX
XX Sequence 451 AA;

Query Match 100.0%; Score 625; DB 8; Length 451;
 Best Local Similarity 100.0%; Pred. No. 2.9e-49;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGSLRLSCAIVSGYSITSGYSMMNIRQAPGKGLFWASITTDGSTNY 60
 DB 1 EVOLVESGGGLVQPGSLRLSCAIVSGYSITSGYSMMNIRQAPGKGLFWASITTDGSTNY 60

QY 61 NPSVKGRIITSRDSSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
 DB 61 NPSVKGRIITSRDSSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 22
 ADQ90734 standard; protein; 474 AA.
 ID ADQ90734
 XX
 AC ADQ90734;
 DT 21-OCT-2004 (first entry)
 XX
 DE Anti-IGB antibody E25 heavy chain protein SEQ ID NO:15.
 XX
 KW antibody; antigen binding fragment; cell culture; variable domain;
 KW modified framework region; hypervariable region; cytostatic;
 KW antiinflammatory; antiangiogenic; immunomodulatory; antibody therapy;
 KW tumour; inflammatory disorder; angiogenic disorder;
 KW immunological disorder; anti-IGB antibody;
 KW anti immunoglobulin E antibody; heavy chain.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 PN WO2004065417-A2.
 PD 05-AUG-2004.
 XX
 PF 23-JAN-2004; 2004MO-US001844.
 XX
 PR 23-JAN-2003; 2003US-0442484P.
 XX
 PA (GETH) GENENTECH INC.
 PI Simmons L;
 XX
 DR WPI; 2004-562149/54.
 DR N-PsDB; ADQ90716.
 XX
 PT Producing an antibody or antigen binding fragment in high yield in a cell
 XX region in a host cell.
 PS Example 3; SEQ ID NO 21; 161pp; English.

The present invention describes a method for producing an antibody or
 antigen binding fragment in high yield in a cell culture. The method
 comprises expressing a variable domain of the antibody or antigen binding
 fragment comprising a modified framework region (FR) in a host cell, and
 recovering the antibody or antigen binding fragment variable domain
 comprising the modified framework from the host cell. The modified FR in
 the method described above has a substitution of at least one amino acid
 position with a different amino acid, where the different amino acid is
 the amino acid found at the corresponding FR position of a human subgroup
 (HVR) and/or HVR2 amino acid sequence that has a hypervariable region 1
 with a corresponding HVR1 and/or HVR2 sequence of the variable domain.
 The antibody or antigen binding fragment variable domain comprises the
 modified FR that has improved yield in cell culture compared to an
 unmodified antibody or antigen-binding fragment. The antibody and antigen
 binding fragment have cytostatic, antiinflammatory, antiangiogenic and
 immunomodulatory activities, and can be used in antibody therapy. The
 methods and compositions of the present invention are useful for
 producing antibodies or antigen binding fragments in cell culture, in

CC particular for improving the yield of recombinant antibodies or antigen
 CC binding fragments in cell culture. The antibodies of the invention can be
 CC used to diagnose, treat, inhibit or prevent e.g. tumours and
 CC inflammatory, angiogenic and immunological disorders. The present
 CC sequence represents the heavy chain of an anti-IGB (immunoglobulin E)
 CC antibody, which is used in the exemplification of the present invention.
 XX

Sequence 474 AA;

QY 1 EVOLVESGGGLVQPGSLRLSCAIVSGYSITSGYSMMNIRQAPGKGLFWASITTDGSTNY 60
 DB 24 EVOLVESGGGLVQPGSLRLSCAIVSGYSITSGYSMMNIRQAPGKGLFWASITTDGSTNY 83

QY 61 NPSVKGRIITSRDSSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 114
 DB 84 NPSVKGRIITSRDSSKNTFYLOMNSLRAPDTAVYYCARGSHYFGHMFPAWVGQ 137

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 Job time : 71 secs

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OM protein - protein search, using sw model

Run on: June 3, 2005, 12:41:33 ; Search time 22 Seconds
(Without alignments)
386.818 Million cell updates/sec

Title: US-10-791-619-11

Perfect score: 623

Sequence: 1 EVQLVESGGGLVQPGGSLRL...YCARSHYFGMHFAVWGQG 114

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	623	100.0	114	2	US-08-887-352B-11
2	623	100.0	114	3	US-09-109-207C-11
3	623	100.0	114	3	US-09-296-005-11
4	623	100.0	114	4	US-09-920-171-11
5	623	100.0	114	4	US-09-716-028-11
6	623	100.0	114	4	US-10-113-996-11
7	623	100.0	229	2	US-08-887-352B-21
8	623	100.0	229	2	US-09-109-207C-21
9	623	100.0	229	3	US-09-296-005-21
10	623	100.0	229	4	US-09-920-171-21
11	623	100.0	229	4	US-09-716-028-21
12	623	100.0	229	4	US-10-113-996-21
13	623	100.0	233	2	US-08-887-352B-26
14	623	100.0	233	3	US-09-109-207C-26
15	623	100.0	233	3	US-09-296-005-26
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18	623	100.0	233	4	US-10-113-996-26
19	623	100.0	248	2	US-08-887-352B-23
20	623	100.0	248	2	US-09-109-207C-23
21	623	100.0	248	3	US-09-296-005-23
22	623	100.0	248	4	US-09-920-171-23
23	623	100.0	248	4	US-09-716-028-23
24	623	100.0	248	4	US-10-113-996-23
25	623	100.0	451	2	US-08-887-352B-18
26	623	100.0	451	3	US-09-109-207C-18
27	623	100.0	451	3	US-09-282-505-2

28	623	100.0	451	3	US-09-054-255-2	Sequence 2, Appl1
29	623	100.0	451	3	US-09-296-005-18	Sequence 18, Appl1
30	623	100.0	451	4	US-09-282-846-2	Sequence 2, Appl1
31	623	100.0	451	4	US-09-680-145-2	Sequence 2, Appl1
32	623	100.0	451	4	US-09-920-171-18	Sequence 18, Appl1
33	623	100.0	451	4	US-09-716-028-18	Sequence 18, Appl1
34	623	100.0	451	4	US-09-483-588-2	Sequence 2, Appl1
35	623	100.0	451	4	US-10-113-996-18	Sequence 18, Appl1
36	603	96.8	114	2	US-08-887-352B-12	Sequence 12, Appl1
37	603	96.8	114	3	US-09-109-207C-12	Sequence 12, Appl1
38	603	96.8	114	3	US-09-296-005-12	Sequence 12, Appl1
39	603	96.8	114	4	US-09-920-171-12	Sequence 12, Appl1
40	603	96.8	114	4	US-09-716-028-12	Sequence 12, Appl1
41	603	96.8	114	4	US-10-113-996-12	Sequence 12, Appl1
42	603	96.8	229	2	US-08-887-352B-20	Sequence 20, Appl1
43	603	96.8	229	3	US-09-109-207C-20	Sequence 20, Appl1
44	603	96.8	229	3	US-09-296-005-20	Sequence 20, Appl1
45	603	96.8	229	4	US-09-920-171-20	Sequence 20, Appl1

ALIGNMENTS

```
RESULT 1
US-08-887-352B-11
; Sequence 11, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-19e Antibodies and Method of
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Svoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P1123
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 114 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; US-08-887-352B-11
;
Query Match 100.0%; Score 623; DB 2; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 EVQLVESGGGLVQPGGSLRLCAVSGYSITSGSMNIRQAPGKLEWVASIKTSGETKY 60
Db 1 EVQLVESGGGLVQPGGSLRLSCAVSGYSITSGSMNIRQAPGKLEWVASIKTSGETKY 60
OY 61 NPSYKGRITTSRDSDSKNTFTYIQNNLSLAEDTAVYYCARGSHYFGMHFAVWGQG 114
Db 61 NPSYKGRITTSRDSDSKNTFTYIQNNLSLAEDTAVYYCARGSHYFGMHFAVWGQG 114
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RESULT 2
US-09-109-207C-11
; Sequence 11, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; CURRENT FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 11
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-109-207C-11
```

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Query Match          100.0%; Score 623; DB 3; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
QY 61 NPSVKGRITTSRDSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGQG 114
DB 61 NPSVKGRITTSRDSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGQG 114
```

```
RESULT 3
US-09-296-005-11
; Sequence 11, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1r
; CURRENT APPLICATION NUMBER: US/09/296,005
; CURRENT FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 11
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-296-005-11
```

```
Query Match          100.0%; Score 623; DB 3; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
QY 61 NPSVKGRITTSRDSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGQG 114
DB 61 NPSVKGRITTSRDSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGQG 114
```

```
RESULT 4
US-09-920-171-11
; Sequence 11, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 11
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-920-171-11
```

```
Query Match          100.0%; Score 623; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
QY 61 NPSVKGRITTSRDSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGQG 114
DB 61 NPSVKGRITTSRDSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGQG 114
```

```
RESULT 5
US-09-716-028-11
; Sequence 11, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 11
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-716-028-11
```

```
Query Match          100.0%; Score 623; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITGYSNMWIRQAPGKGLHWASIKYSGETKY 60
```

Qy 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114
Db 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114

RESULT 6
US-10-113-996-11

Sequence 11, Application US/10113996
Patent No. 6761889
GENERAL INFORMATION:
APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.
APPLICANT: Lowe, John
TITLE OF INVENTION: Improved Anti-IgE Antibodies
FILE REFERENCE: P1123C13
CURRENT APPLICATION NUMBER: US/10/113,996
CURRENT FILING DATE: 2002-04-01
PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02
PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21
PRIOR APPLICATION NUMBER: US 09/920,171
PRIOR FILING DATE: 2001-08-01
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 11
LENGTH: 114
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-10-113-996-11

Query Match 100.0%; Score 623; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGRTKY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGRTKY 60

Qy 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114
Db 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114

RESULT 7
US-08-887-352B-21

Sequence 21, Application US/08887352B
Patent No. 5994511
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svoboda, Craig G.

REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 21:
SEQUENCE CHARACTERISTICS:
LENGTH: 229 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-21

Query Match 100.0%; Score 623; DB 2; Length 229;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGRTKY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGRTKY 60

Qy 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114
Db 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114

RESULT 8
US-09-109-207C-21

Sequence 21, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide
FILE REFERENCE: P1123C13
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 21
LENGTH: 229
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-229
OTHER INFORMATION: Heavy chain F(ab) derived from MAE11
US-09-109-207C-21

Query Match 100.0%; Score 623; DB 3; Length 229;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGRTKY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGRTKY 60

Qy 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114
Db 61 NPSYKGRITISRDSKNTFYLOMNSLRAPDPAVYYCARGSHYFGHMFPAVWGOG 114

RESULT 9
US-09-296-005-21

Sequence 21, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C13
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
EARLIER APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02

; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 21
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-229
; OTHER INFORMATION: Heavy chain F(ab) derived from MAb11
US-09-296-005-21

Query Match 100.0%; Score 623; DB 3; Length 229;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 61 NPSVKGRTITSRDSSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGOG 114

RESULT 10
US-09-920-171-21
; Sequence 21, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 21
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain F(ab) derived from MAb11
US-09-920-171-21

Query Match 100.0%; Score 623; DB 4; Length 229;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
QY 61 NPSVKGRTITSRDSSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGOG 114
DB 61 NPSVKGRTITSRDSSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGOG 114

RESULT 11
US-09-716-028-21
; Sequence 21, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17

; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 21
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-229
; OTHER INFORMATION: Heavy chain F(ab) derived from MAb11
US-09-716-028-21

Query Match 100.0%; Score 623; DB 4; Length 229;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 61 NPSVKGRTITSRDSSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGOG 114

RESULT 12
US-10-113-996-21
; Sequence 21, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 21
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain F(ab) derived from MAb11
US-10-113-996-21

Query Match 100.0%; Score 623; DB 4; Length 229;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
QY 61 NPSVKGRTITSRDSSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGOG 114
DB 61 NPSVKGRTITSRDSSKNTFYLOMNSLRAPDTAVYYCARSGSHYFGHMFAVWGOG 114

RESULT 13
US-08-887-352B-26
; Sequence 26, Application US/08887352B
; Patent No. 594511

GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
TITLE OF INVENTION: Improving Polypeptides
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svoboda, Craig G.
REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 26:
SEQUENCE CHARACTERISTICS:
LENGTH: 233 amino acids
TYPE: Amino Acid
TOPOLOGY: linear
US-08-887-352B-26

Query Match 100.0%; Score 623; DB 2; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKRITISRDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFVAWGOG 114
DB 61 NPSVKRITISRDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFVAWGOG 114

RESULT 14
US-09-109-207C-26
Sequence 26, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptide
FILE REFERENCE: P1123RI
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 26
LENGTH: 233
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-233
OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAb11
US-09-109-207C-26

Query Match 100.0%; Score 623; DB 3; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 100.0%; Score 623; DB 3; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKRITISRDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFVAWGOG 114
DB 61 NPSVKRITISRDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFVAWGOG 114

RESULT 15
US-09-296-005-26
Sequence 26, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1I
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
EARLIER APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 26
SEQ ID NO 26
LENGTH: 233
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-233
OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAb11
US-09-296-005-26

Query Match 100.0%; Score 623; DB 3; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKRITISRDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFVAWGOG 114
DB 61 NPSVKRITISRDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFVAWGOG 114

RESULT 16
US-09-920-171-26
Sequence 26, Application US/09920171
Patent No. 6682735
GENERAL INFORMATION:
APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.
APPLICANT: Lowe, John
TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
FILE REFERENCE: P1123C2US
CURRENT APPLICATION NUMBER: US/09/920,171
CURRENT FILING DATE: 2001-08-01
PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02
PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 26
LENGTH: 233
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
NAME/KEY: Artificial Sequence
LOCATION: 1-233
OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAb11
US-09-920-171-26

```
Query Match 100.0%; Score 623; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 17
US-09-716-028-26
; Sequence 26, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716, 028
; PRIOR FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 26
; LENGTH: 233
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-233
; OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-09-716-028-26

Query Match 100.0%; Score 623; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLNPGGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 18
US-10-113-996-26
; Sequence 26, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-1gE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113, 996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 06/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 26
; LENGTH: 233
```

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; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Heavy chain F(ab)'2 sequence derived from MAE11
US-10-113-996-26

Query Match 100.0%; Score 623; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 2.4e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 19
US-08-887-352B-23
; Sequence 23, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Syvoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P1123
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 248 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
US-08-887-352B-23

Query Match 100.0%; Score 623; DB 2; Length 248;
Best Local Similarity 100.0%; Pred. No. 2.6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVOPGSLRLSCAVSGYSITSGYSNMWIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114
DB 61 NPSVKGRITISRDSKNTFYLOMNSLRABDTAVYYCARGSHYFGHMFPAWVGQ 114

RESULT 20
US-09-109-207C-23
```

; Sequence 23, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptide
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 23
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-248
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-109-207C-23

Query Match 100.0%; Score 623; DB 3; Length 248;
Best Local Similarity 100.0%; Pred. No. 2.6e-54;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114
Db 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114

RESULT 21
US-09-296-005-23
; Sequence 23, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1r
; CURRENT APPLICATION NUMBER: US/09/296,005
; CURRENT FILING DATE: 1999-04-21
; EARLIER APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 23
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-248
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-296-005-23

Query Match 100.0%; Score 623; DB 3; Length 248;
Best Local Similarity 100.0%; Pred. No. 2.6e-54;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114
Db 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114

RESULT 22
US-09-920-171-23
; Sequence 23, Application US/09920171

; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-1gE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 23
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-920-171-23

Query Match 100.0%; Score 623; DB 4; Length 248;
Best Local Similarity 100.0%; Pred. No. 2.6e-54;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114
Db 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114

RESULT 23
US-09-716-028-23
; Sequence 23, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 23
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-248
; OTHER INFORMATION: sfv sequence derived from MAE11
US-09-716-028-23

Query Match 100.0%; Score 623; DB 4; Length 248;
Best Local Similarity 100.0%; Pred. No. 2.6e-54;

Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGGSLRLSCAVGSYISGYSWMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114
Db 61 NPSYKGRITTSRDSSKNTFYIQNNSLRAEDTAVYYCARGSHYFGHMHPAVWGOG 114

RESULT 24
US-10-113-996-23
; Sequence 23, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-1GE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 23
; LENGTH: 248
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: sfv sequence derived from MAE11
US-10-113-996-23
Query Match 100.0%; Score 623; DB 4; Length 248;
Best Local Similarity 100.0%; Pred. No. 2.6e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSTVKGRIITISRDSDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFPAWVGQ 114
Db 61 NPSTVKGRIITISRDSDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFPAWVGQ 114
RESULT 25
US-08-887-352B-18
; Sequence 18, Application US/08887352B
; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of
; NUMBER OF SEQUENCES: 26
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 MB floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Winpatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/887,352B
; FILING DATE: 03-Jul-1997
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Syvoboda, Craig G.
; REGISTRATION NUMBER: 39,044
; REFERENCE/DOCKET NUMBER: P1123
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-1489

TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 18:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 451 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
US-08-887-352B-18
Query Match 100.0%; Score 623; DB 2; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSTVKGRIITISRDSDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFPAWVGQ 114
Db 61 NPSTVKGRIITISRDSDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFPAWVGQ 114
RESULT 26
US-09-109-207C-18
; Sequence 18, Application US/09109207C
; Patent No. 6172213
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-1GE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/109,207C
; CURRENT FILING DATE: 1998-06-30
; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 18
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-451
; OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-109-207C-18
Query Match 100.0%; Score 623; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASIKYSGETKY 60
Db 1 EVOLVESGGGLVQPGSLRLSCAASGYSITSGYSMMNIRQAPGKLEWVASIKYSGETKY 60
Qy 61 NPSTVKGRIITISRDSDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFPAWVGQ 114
Db 61 NPSTVKGRIITISRDSDSKNTFYLQNNSLRAEDTAVYYCARSGSHYFGHMFPAWVGQ 114
RESULT 27
US-09-282-505-2
; Sequence 2, Application US/09282505A
; Patent No. 6194551
; GENERAL INFORMATION:
; APPLICANT: Esche Ekinadese Idusogie et al.
; TITLE OF INVENTION: Polypeptide Variants
; FILE REFERENCE: P1266R1
; CURRENT APPLICATION NUMBER: US/09/282,505A
; CURRENT FILING DATE: 1999-03-31
; NUMBER OF SEQ ID NOS: 2
; SEQ ID NO 2
; LENGTH: 451
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:

/ NAME/KEY: Artificial Sequence
/ LOCATION: 1-451
/ OTHER INFORMATION: Sequence is completely synthesized
/ Patent No. 6194551
US-09-282-505-2

Query Match 100.0%; Score 623; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114

RESULT 28

US-09-054-255-2
/ Sequence 2, Application US/09054255
/ Patent No. 6242195
/ GENERAL INFORMATION:
/ APPLICANT: Eschoe Ekinaduse Idusogie et al.
/ TITLE OF INVENTION: Polypeptide Variants
/ FILE REFERENCE: P1266
/ CURRENT APPLICATION NUMBER: US/09/054,255
/ CURRENT FILING DATE: 1998-04-02
/ NUMBER OF SEQ ID NOS: 2
/ SEQ ID NO 2
/ LENGTH: 451
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ OTHER INFORMATION: E27 anti-IgE antibody heavy chain
US-09-054-255-2

Query Match 100.0%; Score 623; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114

RESULT 29

US-09-296-005-18
/ Sequence 18, Application US/09296005
/ Patent No. 6290957
/ GENERAL INFORMATION:
/ APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardiou, John Lowe
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
/ FILE REFERENCE: P112301
/ CURRENT APPLICATION NUMBER: US/09/296,005
/ CURRENT FILING DATE: 1999-04-21
/ EARLIER APPLICATION NUMBER: US 08/887,352
/ EARLIER FILING DATE: 1997-07-02
/ NUMBER OF SEQ ID NOS: 26
/ SEQ ID NO 18
/ LENGTH: 451
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-451
/ OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-296-005-18

Query Match 100.0%; Score 623; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114

RESULT 30

US-09-282-846-2
/ Sequence 2, Application US/09282846
/ Patent No. 6528624
/ GENERAL INFORMATION:
/ APPLICANT: Eschoe Ekinaduse Idusogie et al.
/ TITLE OF INVENTION: Polypeptide Variants
/ FILE REFERENCE: P1266R2
/ CURRENT APPLICATION NUMBER: US/09/282,846
/ CURRENT FILING DATE: 1999-03-31
/ NUMBER OF SEQ ID NOS: 2
/ SEQ ID NO 2
/ LENGTH: 451
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ NAME/KEY: Artificial Sequence
/ LOCATION: 1-451
/ OTHER INFORMATION: Sequence is completely synthesized
/ Patent No. 6528624
US-09-282-846-2

Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVQPGGSLRLSCAASGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114
DB 61 NPSYKGRITISRDSKNTFYLQNNSLRAEDTAVYYCARGSHYFGHMHPAAWGOG 114

RESULT 31

US-09-680-145-2
/ Sequence 2, Application US/09680145
/ Patent No. 6538124
/ GENERAL INFORMATION:
/ APPLICANT: Eschoe Ekinaduse Idusogie et al.
/ TITLE OF INVENTION: Polypeptide Variants
/ FILE REFERENCE: P1266R1
/ CURRENT APPLICATION NUMBER: US/09/680,145
/ CURRENT FILING DATE: 2000-10-03
/ PRIOR APPLICATION NUMBER: 09/282,505
/ PRIOR FILING DATE: 1999-03-13
/ NUMBER OF SEQ ID NOS: 2
/ SEQ ID NO 2
/ LENGTH: 451
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ NAME/KEY: Artificial Sequence
/ LOCATION: 1-451
/ OTHER INFORMATION: Sequence is completely synthesized
/ Patent No. 6538124
US-09-680-145-2

Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
QY 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114
DB 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 32
US-09-920-171-18
; Sequence 18, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:

APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.
APPLICANT: Lowe, John
TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
FILE REFERENCE: P1123C2US

CURRENT APPLICATION NUMBER: US/09/920,171
CURRENT FILING DATE: 2001-08-01
PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02
PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21

NUMBER OF SEQ ID NOS: 44
SEQ ID NO 18
LENGTH: 451
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-920-171-18

Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
QY 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114
DB 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 33
US-09-716-028-18
; Sequence 18, Application US/09716028
; Patent No. 6723833
; GENERAL INFORMATION:

APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123R1
CURRENT APPLICATION NUMBER: US/09/716,028
CURRENT FILING DATE: 2000-11-17
PRIOR APPLICATION NUMBER: US 09/109,207
PRIOR FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 18
LENGTH: 451
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial

LOCATION: 1-451
OTHER INFORMATION: Heavy chain sequence derived from MAE11
US-09-716-028-18

Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
QY 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114
DB 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 34
US-09-483-588-2
; Sequence 2, Application US/09483588
; Patent No. 6737056
; GENERAL INFORMATION:

APPLICANT: Leonard Presta
TITLE OF INVENTION: Polypeptide Variants with Altered Effector Function
FILE REFERENCE: P1126R1
CURRENT APPLICATION NUMBER: US/09/483,588
CURRENT FILING DATE: 2000-01-14
EARLIER APPLICATION NUMBER: US 60/116,023
EARLIER FILING DATE: 1999-01-15
NUMBER OF SEQ ID NOS: 11
SEQ ID NO 2
LENGTH: 451
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
NAME/KEY: Artificial Sequence
LOCATION: 1-451
OTHER INFORMATION: Sequence is completely synthesized
; Patent No. 6737056
US-09-483-588-2

Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 5.1e-54;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAIVSGYISYSGYSSNMIRQAPGKGLFWASIKYSGETKY 60
QY 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114
DB 61 NPSVKRITISRDTSKNTFTYLNMSLRAPDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 35
US-10-113-996-18
; Sequence 18, Application US/10113996
; Patent No. 6761889
; GENERAL INFORMATION:

APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.
APPLICANT: Lowe, John
TITLE OF INVENTION: Improved Anti-IgE Antibodies
FILE REFERENCE: P1123C3US
CURRENT APPLICATION NUMBER: US/10/113,996
CURRENT FILING DATE: 2002-04-01
PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02
PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21
PRIOR APPLICATION NUMBER: US 09/920,171
PRIOR FILING DATE: 2001-08-01

; NUMBER OF SEQ ID NOS: 44
 ; SEQ ID NO 18
 ; LENGTH: 451
 ; TYPE: PRT
 ; ORGANISM: Artificial Sequence
 ; FEATURE:
 ; OTHER INFORMATION: Heavy chain sequence derived from MAE11
 ; US-10-113-996-18

Query Match 100.0%; Score 623; DB 4; Length 451;
 Best Local Similarity 100.0%; Pred. No. 5.1e-54;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	EVQLVESGGGIWPGQSLRLS	CAVSGYSITSGYGMNIRQAPGKLEWVASIKYSGETKY	60
Db	1	EVQLVESGGGIWPGQSLRLS	CAVSGYSITSGYGMNIRQAPGKLEWVASIKYSGETKY	60
Qy	61	NPSYKGRITISRDDSKNTFY	LQNNSLRAEDTAVYYCARGSHYFGHWHPAVWGQG	114
Db	61	NPSYKGRITISRDDSKNTFY	LQNNSLRAEDTAVYYCARGSHYFGHWHPAVWGQG	114

Search completed: June 3, 2005, 12:45:37
 Job time : 23 secs

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GenCore version 5.1.6
Copyright (c) 1993 - 2005 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: June 3, 2005, 12:36:52 ; Search time 70 Seconds
(without alignments)
629.867 Million cell updates/sec

Title: US-10-791-619-11
Perfect score: 623
Sequence: 1 EVQLVESGGGLVPGGSLRL.....YCARGSHTFGMHFAVWGQ 114

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues
Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Listing first 45 summaries

Database : A_Geneseq_16Dec04:*
1: geneseqp1980s:*
2: geneseqp1980s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	623	100.0	114	2	AAW95656 Mus muscu
2	623	100.0	114	4	AAW95656 Mus muscu
3	623	100.0	114	8	AAW95656 Mus muscu
4	623	100.0	229	4	AAW95656 Mus muscu
5	623	100.0	229	4	AAW95656 Mus muscu
6	623	100.0	229	8	AAW95656 Mus muscu
7	623	100.0	229	4	AAW95656 Mus muscu
8	623	100.0	229	4	AAW95656 Mus muscu
9	623	100.0	229	8	AAW95656 Mus muscu
10	623	100.0	229	4	AAW95656 Mus muscu
11	623	100.0	229	4	AAW95656 Mus muscu
12	623	100.0	229	8	AAW95656 Mus muscu
13	623	100.0	229	4	AAW95656 Mus muscu
14	623	100.0	229	4	AAW95656 Mus muscu
15	623	100.0	229	4	AAW95656 Mus muscu
16	623	100.0	229	4	AAW95656 Mus muscu
17	623	100.0	229	4	AAW95656 Mus muscu
18	623	100.0	229	4	AAW95656 Mus muscu
19	623	100.0	229	4	AAW95656 Mus muscu
20	623	100.0	229	4	AAW95656 Mus muscu
21	623	100.0	229	4	AAW95656 Mus muscu
22	623	100.0	229	4	AAW95656 Mus muscu
23	623	100.0	229	4	AAW95656 Mus muscu
24	623	100.0	229	4	AAW95656 Mus muscu
25	623	100.0	229	4	AAW95656 Mus muscu

26	603	96.8	229	4	AAW95656 Mus muscu
27	603	96.8	229	8	AAW95656 Mus muscu
28	603	96.8	229	8	AAW95656 Mus muscu
29	603	96.8	229	4	AAW95656 Mus muscu
30	603	96.8	229	4	AAW95656 Mus muscu
31	603	96.8	229	4	AAW95656 Mus muscu
32	603	96.8	229	4	AAW95656 Mus muscu
33	603	96.8	229	4	AAW95656 Mus muscu
34	603	96.8	229	4	AAW95656 Mus muscu
35	603	96.8	229	4	AAW95656 Mus muscu
36	603	96.8	229	4	AAW95656 Mus muscu
37	603	96.8	229	4	AAW95656 Mus muscu
38	603	96.8	229	4	AAW95656 Mus muscu
39	603	96.8	229	4	AAW95656 Mus muscu
40	603	96.8	229	4	AAW95656 Mus muscu
41	603	96.8	229	4	AAW95656 Mus muscu
42	603	96.8	229	4	AAW95656 Mus muscu
43	603	96.8	229	4	AAW95656 Mus muscu
44	603	96.8	229	4	AAW95656 Mus muscu
45	603	96.8	229	4	AAW95656 Mus muscu

ALIGNMENTS

RESULT 1
AAW95656
ID AAW95656 standard; protein; 114 AA.
XX
AC AAW95656;
XX
DT 08-JUN-1999 (first entry)
XX
DE Mus musculus anti-IgE e27 variable heavy chain.
XX
KW Variable heavy chain; IgE; antibody; anti-IgE; reduction; prevention;
KW histamine; production; hypersensitivity; allergen; anaphylaxis;
KW atopic allergy; asthma; allergic rhinitis; conjunctivitis; hay fever;
KW eczema; anaphylactic shock; urticaria.
XX
XX Mus musculus.
XX
XX WO9901556-A2.
XX
XX 14-JAN-1999.
XX
XX 30-JUN-1998; 98WO-US013410.
XX
XX 02-JUL-1997; 97US-00887352.
XX
XX (GERTH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI; 1999-106057/09.
XX
XX Improving affinity of polypeptides, particularly anti-IgE antibodies - by
XX identifying aspartyl residues which undergo isomerisation and
XX substituting alternative residues and screening for affinity against the
XX target.
XX
XX Disclosure; Page 90-91, 129pp; English.
XX
XX The sequence is that of the variable heavy chain of e27. It was used as
XX part of a method to improve the affinity of anti-IgE antibodies such as
XX e26 and e27. The e26 and e27 antibodies can be used for reducing or
XX preventing IgE mediated production of histamine in a mammal. They can be
XX used for treating a disorder mediated by IgE such as hypersensitivity,
XX atopic allergy, asthma, allergic rhinitis, conjunctivitis, hay fever,
XX eczema, anaphylactic shock and urticaria. The antibodies can also be used
XX for affinity purification, detection and diagnosis
XX
XX Sequence 114 AA;
XX
XX

Query Match	100.0%;	Score 623;	DB 2;	length 114;
Best Local Similarity	100.0%;	Pred. No. 5.2e-51;		
Matches 114;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;

QY 1 EVQLVESGGGLVQPGGSLRLSCAVSGSYITSGYSMNMIKQAPGKLEWVASIKYSGETTKY 600

Db 1 EVQLVESGGGLVQPGGSLRLSCAVSGSYITSGYSMNMIKQAPGKLEWVASIKYSGETTKY 600

Oy	61	NPSVKGRTISRDSKNTFYLMNSLRAPETA	VYYCARGSHYGHMHFAWGGG	114
Dd	61	NPSVKGRITISRDSDKNTFYLMNSLRAEDTA	VVYYCARGSHYGHMHFAWGGG	114

RESULT 2
AAB76945
ID AAB76945 standard; protein; 114 AA

AC	AAB76945;
XX	
DT	17-APR-2001 (first entry)

DE Variable heavy chain sequence of e27 SEQ ID 11.

KM Antibody; antiasthmatic; antiallergic; ophthalmological; dermatological;
KM antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
KM conjunctivitis; eczema; urticaria; food allergy.

OS Synthetic.

PN US6172213-B1.

PD 09-JAN-2001.

PF 30-JUN-1998; 98US-00109207.

PR 02-JUL-1997; 97US-0051554P.

PA (GETH) GENENTECH INC.

PI Lowman HB, Presta LG, Jardiou PM, Lowe J;
...

DR WPI; 2001-122353/13.

PT New nucleic acid encoding anti-immunoglobulin E antibody with improved
PT properties, produced by substituting aspartyl residues in unimproved
PT immunoglobulin E prone to isomerization by other residues by affinity
PT maturation with phage display.

PS Disclosure; Fig 2; 87pp; English.

CC This invention relates to a nucleotide sequence encoding an antibody with
CC improved anti-IgE antibody activity. The antibody has improved action due
CC to a process comprising, a) identifying aspartyl residues prone to
CC isomerization in unimproved anti-IgE (immunoglobulin E) antibody, b)
CC substituting alternative residues to create candidate molecules, and c)
CC selecting those candidate molecules which display affinity against the
CC target molecule. Use of the antibody results in antiasthmatic,
CC antiallergic, ophthalmological, dermatological and antiinflammatory
CC activity. The antibodies are useful for treating IgE-mediated disorders
CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
CC food allergies. The mutant antibodies produced by the above mentioned
CC nucleic acids may also be used as affinity purification agents and in
CC diagnostic assays for detecting the expression of an antigen of interest
CC in specific cells, tissues or serum. Amino acid sequences AAB76935-
CC AAB76960 represent fragments of anti-IgE antibodies of the invention.
CC Polynucleotide sequence AAB69235 represents an expression plasmid used
CC in the course of the invention, and oligonucleotides AAB69254 - AAB69271 are
CC used in the generation of affinity improved anti-IgE antibodies

Sequence 114 AA; SQ

Query Match 100.0%; Score 623; DB 4; Length 114;

Best Local Similarity 100.0%; Pred. No. 5.2e-51;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

1 EVQLVDSGGGLVPPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWASIKYSGETKY 600

1 EVQLVDSGGGLVPPGSLRLSCAASGYSITSGYSNMWIRQAPGKLEWASIKYSGETKY 600

61 NPSVKGRTISRDSKNTFYLMNMSLRADTAATVVCARGSHYFGHMHFAVWGQG 114
61 NPSVKGRTISRDSKNTFYLMNMSLRADTAATVVCARGSHYFGHMHFAVWGQG 114

RESULT 3
ADN07032
ADN07032 standard; protein; 114 AA

AC	ADN07032;
XX	
DT	01-JUL-2004 (first entry)

Anti-IgE antibody e27 variable heavy chain domain (VH).

Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder; therapy; atopic allergy; anaphylactic hypersensitivity; asthma; allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy variable heavy chain domain; VH

Unidentified.

Key	Location/Qualifiers
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4	4.1
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7	7.1
8	8.1
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98	98.1
99	99.1
100	100.1

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/label= CDR-H3

US6723833-B1

20-APR-2004

17-NOV-2000; 2000US-00716028.

02-JUL-1997; 97US-0051554P

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1000

NEW New composition of an improved anti-IgE antibody or IgE binding fragment useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma, conjunctivitis, eczema, urticaria or food allergies.

PS Disclosure; SEQ ID NO 11; 89pp; English.

The invention relates to therapeutic compositions comprising anti-IgE antibody or IgE binding fragment in combination with an adjuvant immunosuppressive agent. The composition is useful for treating IgE-mediated disorders, the disorders include atopic allergy associated with anaphylactic hypersensitivity and asthma, allergic rhinitis and conjunctivitis, eczema, urticaria and food allergic diseases. The present sequence is an anti-IgE antibody variable heavy chain domain (VH).

Sequence 114 AA;

Query Match	100.0%;	Score 623;	DB 8;	Length 114;
Best Local Similarity	100.0%;	Pred. No. 5.2e-51;		
Matches 114;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;

1 EVQLVESGGGLVQPGGSLRLSCA VSGYSITSGYSWNWIRQAPGKGLEWVASIKYSGETKY 60

DB 1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSMMNIRQAPGKGLFWASIKYSGETKY 60
 QY 61 NPSVKGRITTSRDSDSKNTFYLOMNSLRADDTAVYYCARSGSHYFGHMFPAWVGQ 114
 DB 61 NPSVKGRITTSRDSDSKNTFYLOMNSLRADDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 4

AAW95666 standard; protein; 229 AA.

AAW95666;

08-JUN-1999 (first entry)

Mus musculus anti-IgE e27 variable heavy chain Fab fragment.

Variable; IgE; Fab fragment; antibody; anti-IgE; reduction; prevention; histamine; production; hypersensitivity; allergen; anaphylaxis; atopic allergy; asthma; allergic rhinitis; conjunctivitis; hay fever; eczema; anaphylactic shock; urticaria; heavy chain.

Mus musculus.

MO9901556-A2.

14-JAN-1999.

30-JUN-1998; 98MO-US013410.

02-JUL-1997; 97US-00887352.

(GETH) GENENTECH INC.

Lowman HB, Presta LG, Jardieu PM, Lowe J;

WPI; 1999-106057/09.

Improving affinity of polypeptides, particularly anti-IgE antibodies - by identifying aspartyl residues which undergo isomerization and substituting alternative residues and screening for affinity against the target.

Disclosure; Page 101-102; 123pp; English.

The sequence is that of the variable heavy chain Fab fragment of e27. It was used as part of a method to improve the affinity of anti-IgE antibodies such as e26 and e27. The e26 and e27 antibodies can be used for reducing or preventing IgE mediated production of histamine in a mammal. They can be used for treating a disorder mediated by IgE such as hypersensitivity, atopic allergy, asthma, allergic rhinitis, CC conjunctivitis, hay fever, eczema, anaphylactic shock and urticaria. The antibodies can also be used for affinity purification, detection and diagnosis

Sequence 229 AA;

Query Match 100.0%; Score 623; DB 2; Length 229;
 Best Local Similarity 100.0%; Pred. No. 1.1e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSMMNIRQAPGKGLFWASIKYSGETKY 60
 DB 1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSMMNIRQAPGKGLFWASIKYSGETKY 60
 QY 61 NPSVKGRITTSRDSDSKNTFYLOMNSLRADDTAVYYCARSGSHYFGHMFPAWVGQ 114
 DB 61 NPSVKGRITTSRDSDSKNTFYLOMNSLRADDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 5
 AAB76955

ID AAB76955 standard; protein; 229 AA.

AAB76955;

17-APR-2001 (first entry)

Variable heavy chain Fab fragment of e27 SEQ ID 21.

Antibody; antiasthmatic; antiallergic; ophthalmological; dermatological; antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy.

Synthetic.

US6172213-B1.

09-JAN-2001.

30-JUN-1998; 98US-00109207.

02-JUL-1997; 97US-0051554P.

(GETH) GENENTECH INC.

Lowman HB, Presta LG, Jardieu PM, Lowe J;

WPI; 2001-122353/13.

New nucleic acid encoding anti-immunoglobulin E antibody with improved properties, produced by substituting aspartyl residues in unimproved immunoglobulin E prone to isomerization by other residues by affinity maturation with phage display.

Claim 3, Fig 13; 87pp; English.

This invention relates to a nucleotide sequence encoding an antibody with improved anti-IgE antibody activity. The antibody has improved action due to a process comprising, a) identifying aspartyl residues prone to isomerization in unimproved anti-IgE (immunoglobulin E) antibody; b) substituting alternative residues to create candidate molecules; and c) selecting those candidate molecules which display affinity against the target molecule. Use of the antibody results in antiasthmatic; antiallergic; ophthalmological; dermatological and antiinflammatory activity. The antibodies are useful for treating IgE-mediated disorders such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and food allergies. The mutant antibodies produced by the above mentioned CC nucleic acids may also be used as affinity purification agents and in diagnostic assays for detecting the expression of an antigen of interest in specific cell, tissues or serum. Amino acid sequences AAB76936- AAB76960 represent fragments of anti-IgE antibodies of the invention. CC Polynucleotide sequence AAF69253 represents an expression plasmid used in the course of the invention, and oligonucleotides AAF69254 - AAF69271 are used in the generation of affinity improved anti-IgE antibodies

Sequence 229 AA;

Query Match 100.0%; Score 623; DB 4; Length 229;
 Best Local Similarity 100.0%; Pred. No. 1.1e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSMMNIRQAPGKGLFWASIKYSGETKY 60
 DB 1 EVOLVSGGGLVPGGSLRLSCAVSGYSITSGYSMMNIRQAPGKGLFWASIKYSGETKY 60
 QY 61 NPSVKGRITTSRDSDSKNTFYLOMNSLRADDTAVYYCARSGSHYFGHMFPAWVGQ 114
 DB 61 NPSVKGRITTSRDSDSKNTFYLOMNSLRADDTAVYYCARSGSHYFGHMFPAWVGQ 114

RESULT 6
 ADN07042
 ID ADN07042 standard; protein; 229 AA.

AC ADN07042;
XX
XX 01-JUL-2004 (first entry)
XX
XX
DE Anti-IgE antibody e27 variable heavy (VH) Fab fragment.
XX
XX Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
XX therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
XX allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
XX variable heavy chain; VH.
OS Unidentified.
XX
XX US6723833-B1.
XX
XX 20-APR-2004.
XX
XX 17-NOV-2000; 2000US-00716028.
XX
XX 02-JUL-1997; 97US-0051554P.
XX 30-JUN-1998; 98US-00109207.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI; 2004-326922/30.
XX
XX New composition of an improved anti-IgE antibody or IgE binding fragment,
XX useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
XX conjunctivitis, eczema, urticaria or food allergies.
XX
XX Claim 8; SEQ ID NO 21; 89pp; English.
XX
XX The invention relates to therapeutic compositions comprising anti-IgE
XX antibody or IgE binding fragment in combination with an adjunct
XX immunosuppressive agent. The composition is useful for treating IgE-
XX mediated disorders. The disorders include atopic allergy associated with
XX anaphylactic hypersensitivity and asthma, allergic rhinitis and
XX conjunctivitis, eczema, urticaria and food allergies. The present
XX sequence is an anti-IgE antibody variable heavy chain (VH) Fab fragment.
SQ Sequence 229 AA;
Query Match 100.0%; Score 623; DB 8; Length 229;
Best Local Similarity 100.0%; Pred. No. 1.1e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVSGGGLVQPGGSLRLSCAASGYSITSGYSWMWIRAPGKGLEWVASIKYSGETKY 60
DB 1 EVQLVSGGGLVQPGGSLRLSCAASGYSITSGYSWMWIRAPGKGLEWVASIKYSGETKY 60
QY 61 NPSVKRITITSRDSSKNTFTYLOMNSLRAPDPAVYYCARSGSHYFGHMFVWGOG 114
DB 61 NPSVKRITITSRDSSKNTFTYLOMNSLRAPDPAVYYCARSGSHYFGHMFVWGOG 114
RESULT 7
ID AAM95671
AAM95671 standard; protein; 233 AA.
XX
XX AAM95671;
XX
XX 08-JUN-1999 (first entry)
XX
XX Mus musculus anti-IgE e27 variable heavy chain F(ab)'2 fragment.
XX
XX Variable heavy chain; IgE; antibody; anti-IgE; reduction; prevention;
XX histamine; production; hypersensitivity; allergen; anaphylaxis;
XX atopic allergy; asthma; allergic rhinitis; conjunctivitis; hay fever;
XX eczema; anaphylactic shock; urticaria; F(ab)'2 fragment.
OS Mus musculus.

XX
XX WO9901556-A2.
XX
XX 14-JAN-1999.
XX
XX 30-JUN-1998; 98WO-US013410.
XX
XX 02-JUL-1997; 97US-00887352.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI; 1999-106057/09.
XX
XX Improving affinity of polypeptides, particularly anti-IgE antibodies - by
XX identifying aspartyl residues which undergo isomerisation and
XX substituting alternative residues and screening for affinity against the
XX target.
XX
XX Disclosure; Page 106; 129pp; English.
XX
XX The sequence is that of the variable heavy chain F(ab)'2 fragment of e27.
XX It was used as part of a method to improve the affinity of anti-IgE
XX antibodies such as e26 and e27. The e26 and e27 antibodies can be used
XX for reducing or preventing IgE mediated production of histamine in a
XX mammal. They can be used for treating a disorder mediated by IgE such as
XX hypersensitivity, atopic allergy, asthma, allergic rhinitis,
XX conjunctivitis, hay fever, eczema, anaphylactic shock and urticaria. The
XX antibodies can also be used for affinity purification, detection and
XX diagnosis
SQ Sequence 233 AA;
Query Match 100.0%; Score 623; DB 2; Length 233;
Best Local Similarity 100.0%; Pred. No. 1.2e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVQLVSGGGLVQPGGSLRLSCAASGYSITSGYSWMWIRAPGKGLEWVASIKYSGETKY 60
DB 1 EVQLVSGGGLVQPGGSLRLSCAASGYSITSGYSWMWIRAPGKGLEWVASIKYSGETKY 60
QY 61 NPSVKRITITSRDSSKNTFTYLOMNSLRAPDPAVYYCARSGSHYFGHMFVWGOG 114
DB 61 NPSVKRITITSRDSSKNTFTYLOMNSLRAPDPAVYYCARSGSHYFGHMFVWGOG 114
RESULT 8
ID AAB76960
AAB76960 standard; protein; 233 AA.
XX
XX AAB76960;
XX
XX 17-APR-2001 (first entry)
XX
XX Variable light chain F(ab)'2 fragment of e27 SEQ ID 26.
XX
XX Antibody; antiasthmatic; antiallergic; ophthalmological; dermatological;
XX antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
XX conjunctivitis; eczema; urticaria; food allergy.
XX
XX Synthetic.
XX
XX US6172213-B1.
XX
XX 09-JAN-2001.
XX
XX 30-JUN-1998; 98US-00109207.
XX
XX 02-JUL-1997; 97US-0051554P.
XX
XX (GETH) GENENTECH INC.
XX

PI Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI; 2001-122353/13.
XX
XX New nucleic acid encoding anti-immunoglobulin E antibody with improved
PT properties, produced by substituting aspartyl residues in unimproved
PT immunoglobulin E prone to isomerization by other residues by affinity
PT maturation with phage display.
XX
XX Claim 3; Fig 15; 87pp; English.
PS
XX This invention relates to a nucleotide sequence encoding an antibody with
CC improved anti-IgE antibody activity. The antibody has improved action due
CC to a process comprising, a) identifying aspartyl residues prone to
CC isomerisation in unimproved anti-IgE (immunoglobulin E) antibody; b)
CC substituting alternative residues to create candidate molecules; and c)
CC selecting those candidate molecules which display affinity against the
CC target molecule. Use of the antibody results in antiasthmatic;
CC anti-allergic; ophthalmological; dermatological and antiinflammatory
CC activity. The antibodies are useful for treating IgE-mediated disorders
CC such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
CC food allergies. The mutant antibodies produced by the above mentioned
CC nucleic acids may also be used as affinity purification agents and in
CC diagnostic assays for detecting the expression of an antigen of interest
CC in specific cell, tissues or serum. Amino acid sequences AAB76936-
CC AAB76960 represent fragments of anti-IgE antibodies of the invention.
CC Polynucleotide sequence AAF69253 represents an expression plasmid used in
CC the course of the invention, and oligonucleotides AAF69254 - AAF69271 are
CC used in the generation of affinity improved anti-IgE antibodies
XX
SQ Sequence 233 AA;
Query Match 100.0%; Score 623; DB 4; Length 233;
Best Local Similarity 100.0%; Pred. No. 1.2e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVOPGGSRLRLSCAVSGYSITSGYSMMNIRQAPGKGLKEMVASIKTSGETKY 60
DB 1 EVOLVESGGGLVOPGGSRLRLSCAVSGYSITSGYSMMNIRQAPGKGLKEMVASIKTSGETKY 60
QY 61 NPSYKGRITISRDSKNTFTYLNMSLRADPTAVYYCARGSHYFGHMFAVWGQG 114
DB 61 NPSYKGRITISRDSKNTFTYLNMSLRADPTAVYYCARGSHYFGHMFAVWGQG 114
RESULT 9
ADN07047
ID ADN07047 standard; protein; 233 AA.
XX
XX ADN07047;
AC
XX 01-JUL-2004 (first entry)
DT
XX
XX Anti-IgE antibody e27 variable heavy (VH) F(ab)' 2 fragment.
DE
XX
XX Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
KM therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
KM allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
KM variable heavy chain; VH.
XX
XX Unidentified.
OS
XX US6723833-B1.
XX
XX 20-APR-2004.
PD
XX
XX 17-NOV-2000; 2000US-00716028.
PF
XX
XX 02-JUL-1997; 97US-0051554P.
PR 30-JUN-1998; 98US-00109207.
XX
XX (GETH) GENENTECH INC.
XX
XX

PI Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI; 2004-326922/30.
XX
XX New composition of an improved anti-IgE antibody or IgE binding fragment,
PT useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
PT conjunctivitis, eczema, urticaria or food allergies.
XX
XX Claim 8; SEQ ID NO 26; 89pp; English.
PS
XX
XX The invention relates to therapeutic compositions comprising anti-IgE
CC antibody or IgE binding fragment in combination with an adjunct
CC immunosuppressive agent. The composition is useful for treating IgE-
CC mediated disorders. The disorders include atopic allergy associated with
CC anaphylactic hypersensitivity and asthma, allergic rhinitis and
CC conjunctivitis, eczema, urticaria and food allergies. The present
CC sequence is an anti-IgE antibody variable heavy chain (VH) F(ab)' 2
CC fragment.
XX
SQ Sequence 233 AA;
Query Match 100.0%; Score 623; DB 8; Length 233;
Best Local Similarity 100.0%; Pred. No. 1.2e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVOPGGSRLRLSCAVSGYSITSGYSMMNIRQAPGKGLKEMVASIKTSGETKY 60
DB 1 EVOLVESGGGLVOPGGSRLRLSCAVSGYSITSGYSMMNIRQAPGKGLKEMVASIKTSGETKY 60
QY 61 NPSYKGRITISRDSKNTFTYLNMSLRADPTAVYYCARGSHYFGHMFAVWGQG 114
DB 61 NPSYKGRITISRDSKNTFTYLNMSLRADPTAVYYCARGSHYFGHMFAVWGQG 114
RESULT 10
AAW95668
ID AAW95668 standard; protein; 248 AA.
XX
XX AAW95668;
AC
XX 08-JUN-1999 (first entry)
DT
XX
XX Mus musculus anti-IgE e27 sfv fragment.
DE
XX
XX sfv fragment; IgE; antibody; anti-IgE; reduction; prevention; histamine;
KM production; hypersensitivity; allergen; anaphylaxis; atopic allergy;
KM asthma; allergic rhinitis; conjunctivitis; hay fever; eczema;
KM anaphylactic shock; urticaria.
XX
XX Mus musculus.
OS
XX
XX W09901556-A2.
XX
XX 14-JAN-1999.
PD
XX
XX 30-JUN-1998; 98WO-US013410.
PF
XX
XX 02-JUL-1997; 97US-00887352.
PR
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
XX WPI; 1999-106057/09.
XX
XX Improving affinity of polypeptides, particularly anti-IgE antibodies - by
PT identifying aspartyl residues which undergo isomerisation and
PT substituting alternative residues and screening for affinity against the
PT target.
PS Disclosure; Page 103-104; 129pp; English.
XX
XX The sequence is that of the e27 sfv fragment. It was used as part of a
CC

Db 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLMEWVASIKYSGETKY 60
 QY 61 NPSYKGRITTSRDSSKNTFTYLNQNSLRAPDAVYVYCARGSHYFGHMFPAWVGOG 114
 Db 61 NPSYKGRITTSRDSSKNTFTYLNQNSLRAPDAVYVYCARGSHYFGHMFPAWVGOG 114

RESULT 13
 AAW95663
 ID AAW95663 standard; protein; 451 AA.

AC AAW95663;
 XX 08-JUN-1999 (first entry)
 DT 08-JUN-1999 (first entry)
 XX Mus musculus anti-IgE e27 full length heavy chain.
 DE Heavy chain; IgE; antibody; anti-IgE; reduction; prevention; histamine;
 KM production; hypersensitivity; allergen; anaphylaxis; atopic allergy;
 KM asthma; allergic rhinitis; conjunctivitis; hay fever; eczema;
 KM anaphylactic shock; urticaria.
 XX Mus musculus.
 OS MO9901556-A2.
 XX 14-JAN-1999.
 PD 30-JUN-1998; 98MO-US013410.
 XX 02-JUL-1997; 97US-00887352.
 PR (GETH) GENENTECH INC.

XX Lowman HB, Presta LG, Jardieu PM, Lowe J;
 PI WPI; 1999-106057/09.

PT Improving affinity of polypeptides, particularly anti-IgE antibodies - by
 PT identifying aspartyl residues which undergo isomerisation and
 PT substituting alternative residues and screening for affinity against the
 PT target.

XX Disclosure; Page 97-99; 129pp; English.

XX The sequence is that of the full length heavy chain of e27. It was used
 CC as part of a method to improve the affinity of anti-IgE antibodies such
 CC as e26 and e27. The e26 and e27 antibodies can be used for reducing or
 CC preventing IgE mediated production of histamine in a mammal. They can be
 CC used for treating a disorder mediated by IgE such as hypersensitivity,
 CC atopic allergy, asthma, allergic rhinitis, conjunctivitis, hay fever,
 CC eczema, anaphylactic shock and urticaria. The antibodies can also be used
 CC for affinity purification, detection and diagnosis

XX Sequence 451 AA;

Query Match 100.0%; Score 623; DB 2; Length 451;
 Best Local Similarity 100.0%; Pred. No. 2.4e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLMEWVASIKYSGETKY 60
 Db 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLMEWVASIKYSGETKY 60
 QY 61 NPSYKGRITTSRDSSKNTFTYLNQNSLRAPDAVYVYCARGSHYFGHMFPAWVGOG 114
 Db 61 NPSYKGRITTSRDSSKNTFTYLNQNSLRAPDAVYVYCARGSHYFGHMFPAWVGOG 114

RESULT 14
 AAY50031
 ID AAY50031 standard; protein; 451 AA.

XX AAY50031;
 AC 19-JAN-2000 (first entry)
 DT 19-JAN-2000 (first entry)
 XX Human E27 anti-IgE antibody heavy chain.

XX Immunoglobulin E; IgE; antibody; vascular endothelial growth factor;
 KM VEGF; chimeric; IgG; assay; Fc gamma receptor; low affinity; hexamer;
 KM complex; cross-linked; enzyme-linked immunosorbent assay; ELISA;
 KM heavy chain.

XX Synthetic.
 OS Homo sapiens.

XX MO9951642-A1.

XX 14-OCT-1999.

XX 31-MAR-1999; 99MO-US006858.

XX 02-APR-1998; 98US-00054255.

XX 15-JAN-1999; 99US-0116100P.

XX (GETH) GENENTECH INC.

XX Idusogie EB, Mulkerin MG, Presta LG, Shields RL;
 PI WPI; 1999-620197/53.

PT Antibody variants useful in receptor binding assays and in therapy of
 PT conditions needing treatment.

XX Example 1; Fig 4B; 69pp; English.

XX This sequence represents human E27 anti-IgE (immunoglobulin E) antibody
 CC heavy chain, which, along with the E27 light chain (AAY50030), comprises
 CC the E27 anti-IgE antibody. The E27 antibody binds the constant regions of
 CC IgE, and when mixed with IgE in an equimolar ratio, forms a stable
 CC hexamer consisting of three E27 molecules and 3 IgE molecules. This
 CC complex-forming ability can be utilised in an assay for the binding of
 CC IgE to Fc gamma receptors Fc-gamma-1IIa, Fc-gamma-1Ib and Fc-gamma-1IIc,
 CC which have IgG affinities in the micromolar range and so cannot be
 CC assayed via a standard ELISA (enzyme-linked immunosorbent assay)

CC protocol. The low affinity receptor binding assay uses E27 and a
 CC recombinant chimeric form of IgE, consisting of a human IgE Fc region and
 CC the Fab regions of an anti-VEGF (vascular endothelial growth factor)
 CC antibody, which binds two VEGF molecules per mole of anti-VEGF chimeric
 CC IgE. When recombinant human VEGF is added at at 2:1 molar ratio to the
 CC IgE:E27 hexamer complexes, the hexamers are linked into larger complexes
 CC via IgE Fab:VEGF interactions. The E27 component of this complex binds to
 CC the Fc-gamma-1IIa, Fc-gamma-1Ib and Fc-gamma-1IIc alpha subunits to permit
 CC detection via ELISA

XX Sequence 451 AA;

Query Match 100.0%; Score 623; DB 2; Length 451;
 Best Local Similarity 100.0%; Pred. No. 2.4e-50;
 Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLMEWVASIKYSGETKY 60
 Db 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMNIRQAPGKGLMEWVASIKYSGETKY 60
 QY 61 NPSYKGRITTSRDSSKNTFTYLNQNSLRAPDAVYVYCARGSHYFGHMFPAWVGOG 114
 Db 61 NPSYKGRITTSRDSSKNTFTYLNQNSLRAPDAVYVYCARGSHYFGHMFPAWVGOG 114

RESULT 15
 AAB07473
 ID AAB07473 standard; protein; 451 AA.

AC AAB07473;
XX 20-OCT-2000 (first entry)
XX
XX Amino acid sequence of E27 and anti-IgE antibody heavy chain.
DE
XX anti-IgE antibody; heavy chain; Fc region; effector function; cancer;
KW allergy; asthma; LFA-1-mediated disorder; tumour; cancer.
XX
XX Synthetic.
OS
XX WO200042072-A2.
XX
XX 20-JUL-2000.
XX
XX 14-JAN-2000; 2000MO-US000973.
XX
XX 15-JAN-1999; 99US-0116023P.
XX
XX (GETH) GENENTECH INC.
XX Presta IG;
XX
XX WPI; 2000-476035/41.
XX
XX New Fc region-containing polypeptides that have altered effector function
PT due to one or more amino acid modifications in the Fc region, useful in
PT the treatment of cancer and allergic conditions such as asthma.
XX
XX Disclosure; Fig 4B; 122pp; English.
PS
XX The present sequence represents the E27 and anti-IgE antibody heavy
CC chain. The protein is used to produce Fc region-containing polypeptides
CC that have altered effector function as a consequence of one or more amino
CC acid modifications in the Fc region. The variant polypeptides are useful
CC for treating cancer, allergic conditions such as asthma (with an anti-IgE
CC antibody), and LFA-1-mediated disorders, where the polypeptide binds the
CC HER2 receptor, the disorder preferably is HER2-expressing cancer, e.g. a
CC benign or malignant tumour characterized by overexpression of the HER2
CC receptor. Such cancers include breast cancer, squamous cell cancer, small
CC cell lung cancer, non-small cell lung cancer, gastrointestinal cancer,
CC pancreatic cancer, glioblastoma, cervical cancer, ovarian cancer, bladder
CC cancer, hepatoma, colon cancer, colorectal cancer, endometrial carcinoma,
CC salivary gland carcinoma, kidney cancer, liver cancer, prostate cancer,
CC vulval cancer, thyroid cancer, hepatic carcinoma and various types of
CC head and neck cancer
XX
XX Sequence 451 AA;
SQ
Query Match 100.0%; Score 623; DB 3; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMWIRQAPGKGLRWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMWIRQAPGKGLRWVASIKYSGETKY 60
QY 61 NPSVKGRIITSRDSSKNTFTLQNNSLRAEDTAVYYCARSGHYFGHMFPAWVGOG 114
DB 61 NPSVKGRIITSRDSSKNTFTLQNNSLRAEDTAVYYCARSGHYFGHMFPAWVGOG 114
RESULT 16
AAB76952
ID AAB76952 standard; protein; 451 AA.
XX
XX AAB76952;
XX
XX 17-APR-2001 (first entry)
XX
XX Full length heavy chain sequence of e27 SEQ ID 18.
XX
XX Antibody; antiasthmatic; antiallergic; ophthalmological; dermatological;

KW antiinflammatory; Ig E; immunoglobulin E; asthma; allergic rhinitis;
KW conjunctivitis; eczema; urticaria; food allergy.
XX
XX Synthetic.
OS
XX US6172213-B1.
XX
XX 09-JAN-2001.
XX
XX 30-JUN-1998; 98US-00109207.
XX
XX 02-JUL-1997; 97US-0051554P.
XX
XX (GETH) GENENTECH INC.
XX
XX Lowman HB, Presta IG, Jardieu PM, Lowe J;
XX
XX WPI; 2001-122353/13.
XX
XX New nucleic acid encoding anti-immunoglobulin E antibody with improved
PT properties, produced by substituting aspartyl residues in unimproved
PT immunoglobulin E prone to isomerization by other residues by affinity
PT maturation with phage display.
XX
XX Claim 4; Fig 12; 87pp; English.
PS
XX This invention relates to a nucleotide sequence encoding an antibody with
XX improved anti-IgE antibody activity. The antibody has improved action due
XX to a process comprising, a) identifying aspartyl residues prone to
XX isomerization in unimproved anti-IgE (immunoglobulin E) antibody; b)
XX substituting alternative residues to create candidate molecules, and c)
XX selecting those candidate molecules which display affinity against the
XX target molecule. Use of the antibody results in antiasthmatic;
XX antiallergic; ophthalmological; dermatological and antiinflammatory
XX activity. The antibodies are useful for treating IgE-mediated disorders
XX such as asthma, allergic rhinitis, conjunctivitis, eczema, urticaria and
XX food allergies. The mutant antibodies produced by the above mentioned
XX nucleic acids may also be used as affinity purification agents and in
XX diagnostic assays for detecting the expression of an antigen of interest
XX in specific cell, tissues or serum. Amino acid sequences AAB76936-
XX AAB76960 represent fragments of anti-IgE antibodies of the invention.
XX Polynucleotide sequence AAF69253 represents an expression plasmid used in
XX the course of the invention, and Oligonucleotides AAF69254 - AAF69271 are
XX used in the generation of affinity improved anti-IgE antibodies
XX
XX Sequence 451 AA;
SQ
Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMWIRQAPGKGLRWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAASGYSITSGYSWMWIRQAPGKGLRWVASIKYSGETKY 60
QY 61 NPSVKGRIITSRDSSKNTFTLQNNSLRAEDTAVYYCARSGHYFGHMFPAWVGOG 114
DB 61 NPSVKGRIITSRDSSKNTFTLQNNSLRAEDTAVYYCARSGHYFGHMFPAWVGOG 114
RESULT 17
AAB74212
ID AAB74212 standard; protein; 451 AA.
XX
XX AAB74212;
XX
XX 17-MAY-2001 (first entry)
XX
XX E27 anti-IgE antibody heavy chain.
XX
XX Antibody; antigen; cancer; allergy; asthma; LFA-mediated; autoimmune;
KW vasculitis.

OS Unidentified.
XX
XX US6194551-B1.
XX
XX 27-FEB-2001.
XX
XX 31-MAR-1999; 99US-00282505.
XX
XX 02-APR-1998; 98US-0080447P.
XX
XX (GETH) GENENTECH INC.
XX
XX Idusogie EE, Presta LG, Mulkerrin MG;
XX
XX WPI; 2001-217935/22.
XX
XX Novel polypeptide variant useful for treating cancers, allergic diseases
PT such as asthma and autoimmune diseases, comprises human immunoglobulin-G
PT Fc region, retains the ability to bind antigen and does not activate
PT complement.
XX
XX PS Disclosure; Fig 4; 30pp; English.
XX
XX CC The present invention relates to a variant of an antibody having a human
CC immunoglobulin (Ig) Fc region, with an amino acid substitution. The
CC mutant retains the ability to bind antigen. The invention is useful for
CC determining the presence of a protein of interest, by exposing the sample
CC suspected of containing the protein to the antibody and determining the
CC binding of it to the sample. The antibody is also useful for treating
CC cancer, allergic conditions including asthma, LFA-mediated disorders,
CC autoimmune disorders and vasculitis
XX
XX SQ Sequence 451 AA;

Query Match 100.0%; Score 623; DB 4; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKGRIITSRDSSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWGOG 114
DB 61 NPSVKGRIITSRDSSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWGOG 114

RESULT 18
ABU62798
ID ABU62798 standard; protein; 451 AA.
XX
XX ABU62798;
XX
XX 11-SEP-2003 (first entry)
XX
XX E27 anti-immunoglobulin E antibody heavy chain.
XX
XX Anti-body; human immunoglobulin G; autoimmune disorder; E27;
XX anti-immunoglobulin E.
XX
XX OS Synthetic.
XX
XX PN US6538124-B1.
XX
XX PD 25-MAR-2003.
XX
XX PF 03-OCT-2000; 2000US-00680145.
XX
XX PR 02-APR-1998; 98US-0080447P.
XX
XX PR 31-MAR-1999; 99US-00282505.
XX
XX PA (GETH) GENENTECH INC.
XX

PI Idusogie EE, Presta LG, Mulkerrin MG;
XX
XX WPI; 2003-531086/50.
XX
XX DR
XX
XX XX New nucleic acid encodes an antibody variant that binds antigen or an
PT immunoadhesin variant that binds a ligand or receptor, useful for
PT preparing a composition for treating a disorder e.g., autoimmune
PT disorder.
XX
XX PS Example 1; Fig 4B; 30pp; English.
XX
XX CC The invention relates to a new isolated nucleic acid that encodes an
CC antibody variant that binds antigen or an immunoadhesin variant that
CC binds a ligand or receptor. The antibody or immunoadhesin variant
CC comprises a human immunoglobulin G Fc region. The nucleic acid is useful
CC for preparing a composition for treating a disorder e.g., autoimmune
CC disorder. The present sequence represents the amino acid sequence of the
CC E27 anti-immunoglobulin E antibody heavy chain
XX
XX SQ Sequence 451 AA;

Query Match 100.0%; Score 623; DB 6; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60
DB 1 EVOLVESGGGLVPGGSLRLSCAVSGYSITSGYSWMNIRQAPGKLEWVASIKYSGETKY 60

QY 61 NPSVKGRIITSRDSSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWGOG 114
DB 61 NPSVKGRIITSRDSSKNTFYLOMNSLRADTAIVYVCARGSHYFGHMFPAWGOG 114

RESULT 19
ADP69598
ID ADP69598 standard; protein; 451 AA.
XX
XX ADP69598;
XX
XX 12-FEB-2004 (first entry)
XX
XX DE Human anti-IgE antibody E27 heavy chain.
XX
XX heavy chain; human; immunoglobulin; IgG; Fc region; cancer; allergy;
XX autoimmune disease; complement-dependent cytotoxicity reduction;
XX anti-IgE; antibody; E27.
XX
XX OS Homo sapiens.
XX
XX PN US2003166868-A1.
XX
XX PD 04-SEP-2003.
XX
XX PF 26-FEB-2001; 2001US-00792938.
XX
XX PR 02-APR-1998; 98US-0080447P.
XX
XX PR 31-MAR-1999; 99US-00282505.
XX
XX PA (GETH) GENENTECH INC.
XX
XX PI Presta LG, Shields RL,
XX
XX DR WPI; 2003-898108/82.
XX
XX XX New variant immunoglobulin Fc peptide, useful for diagnosis and treatment
PT of e.g. cancer, has mutation that reduces activation of complement, also
PT related nucleic acid.
XX
XX PS Disclosure; SEQ ID NO 2; 31pp; English.
XX
XX CC The invention relates to a variant polypeptide comprising a human
CC immunoglobulin (Ig) G Fc region. The variant polypeptides are used

CC diagnostically, based on their binding to a protein analyte or
CC therapeutically, e.g. in cases of cancer, allergy and autoimmune
CC diseases. The variant polypeptides bind to Fc receptors but do not
CC activate complement, so complement-dependent cytotoxicity is reduced or
CC abolished. The present sequence represents the amino acid sequence of
CC human anti-IgE antibody E27 heavy chain.

XX
SQ Sequence 451 AA;

Query Match 100.0%; Score 623; DB 7; Length 451;

Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVPGGSLRLSCAVSGYISYISGMWIRQAPKGLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVPGGSLRLSCAVSGYISYISGMWIRQAPKGLEWVASIKYSGETKY 60
QY 61 NPSVKGRITTSRDSDSKNTFTLQWNSLRADTAAYYCARGSHYFGHMFAYWGQ 114
DB 61 NPSVKGRITTSRDSDSKNTFTLQWNSLRADTAAYYCARGSHYFGHMFAYWGQ 114

RESULT 20
ADF29039

ID ADF29039 standard; protein; 451 AA.

XX ADF29039;

DT 12-FEB-2004 (first entry)

XX Anti-IgE antibody E27-heavy chain.

KW antibody; immunoadhesin; variant; human IgG1 Fc region;
KW human IgG2 Fc region; human IgG3 Fc region; human C1q; cancer;
KM autoimmune disorder; affinity purification; anti-IgE; immunoglobulin;
E27; heavy chain.

XX Unidentified.

PN US2003158389-A1.

PD 21-AUG-2003.

PF 12-NOV-2002; 2002US-00292869.

PR 02-APR-1998; 98US-0080447P.

PR 15-JAN-1999; 99US-0116100P.

PR 31-MAR-1999; 99US-00282846.

PA (GETH) GENENTECH INC.

PI Idusogie EE, Presta LG, Mulkerin MG;

DR WPI; 2003-778020/73.

PT New variant of a parent antibody or immunoadhesin polypeptide, comprising
PT a human IgG1, IgG2 or IgG3 Fc region, useful for preparing a composition
PT for treating disorders, e.g., cancer or as an affinity purification
agent.

PS Disclosure; SEQ ID NO 2; 39pp; English.

XX The invention relates to a variant of a parent antibody or immunoadhesin
CC polypeptide comprising a human IgG1, IgG2 or IgG3 Fc region, where the
CC variant has a better affinity for human C1q than the parent polypeptide
CC and comprises an amino acid substitution in the IgG Fc region, and where
CC the antibody variant binds an antigen and the immunoadhesin variant binds
CC a ligand or receptor. The variant is useful for preparing a composition
CC for treating disorders, e.g., cancer or autoimmune disorders or as an
CC affinity purification agent. The present sequence represents the anti-IgE
XX antibody E27-heavy chain.
SQ Sequence 451 AA;

Query Match 100.0%; Score 623; DB 7; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVPGGSLRLSCAVSGYISYISGMWIRQAPKGLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVPGGSLRLSCAVSGYISYISGMWIRQAPKGLEWVASIKYSGETKY 60
QY 61 NPSVKGRITTSRDSDSKNTFTLQWNSLRADTAAYYCARGSHYFGHMFAYWGQ 114
DB 61 NPSVKGRITTSRDSDSKNTFTLQWNSLRADTAAYYCARGSHYFGHMFAYWGQ 114

RESULT 21

ID ADN07039 standard; protein; 451 AA.

XX ADN07039;

DT 01-JUL-2004 (first entry)

XX Anti-IgE antibody e27 full length variable light chain (VH).

KW Anti-IgE antibody; immunosuppressive agent; IgE-mediated disorder;
KW therapy; atopic allergy; anaphylactic hypersensitivity; asthma;
KW allergic rhinitis; conjunctivitis; eczema; urticaria; food allergy;
KW variable heavy chain; VH.

XX Unidentified.

PN US6723833-B1.

PD 20-APR-2004.

PF 17-NOV-2000; 2000US-00716028.

PR 02-JUL-1997; 97US-0051554P.

PR 30-JUN-1998; 98US-00109207.

PA (GETH) GENENTECH INC.

PI Lowman HB, Presta LG, Jardieu PM, Lowe J;

DR WPI; 2004-326922/30.

PT New composition of an improved anti-IgE antibody or IgE binding fragment,
PT useful for treating IgE-mediated diseases, e.g. atopic allergy, asthma,
PT conjunctivitis, eczema, urticaria or food allergies.

PS Claim 1; SEQ ID NO 18; 89pp; English.

XX The invention relates to therapeutic compositions comprising anti-IgE
CC antibody or IgE binding fragment in combination with an adjunct
CC immunosuppressive agent. The composition is useful for treating IgE-
CC mediated disorders. The disorders include atopic allergy associated with
CC anaphylactic hypersensitivity and asthma, allergic rhinitis and
CC conjunctivitis, eczema, urticaria and food allergies. The present
CC sequence is an anti-IgE antibody variable heavy chain domain (VH).

XX
SQ Sequence 451 AA;

Query Match 100.0%; Score 623; DB 8; Length 451;
Best Local Similarity 100.0%; Pred. No. 2.4e-50;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 EVOLVSGGGLVPGGSLRLSCAVSGYISYISGMWIRQAPKGLEWVASIKYSGETKY 60
DB 1 EVOLVSGGGLVPGGSLRLSCAVSGYISYISGMWIRQAPKGLEWVASIKYSGETKY 60
QY 61 NPSVKGRITTSRDSDSKNTFTLQWNSLRADTAAYYCARGSHYFGHMFAYWGQ 114
DB 61 NPSVKGRITTSRDSDSKNTFTLQWNSLRADTAAYYCARGSHYFGHMFAYWGQ 114

Mon Jun 6 05:40:15 2005

us-10-791-619-11.rag

Page 11

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Job time : 71 secs

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OM protein - protein search, using sw model

Run on: June 3, 2005, 12:36:32 ; Search time 22 Seconds
(without alignments)
386.818 Million cell updates/sec

Title: US-10-791-619-8
Perfect score: 596
Sequence: 1 D1QLTQSPSSLSASVGDRTV.....SHEDPYFGGTKEIKRTV 114

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA:*
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3: /cgn2_6/ptodata/1/1aa/6A COMB.pep:*
4: /cgn2_6/ptodata/1/1aa/6B COMB.pep:*
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6: /cgn2_6/ptodata/1/1aa/backfile1.pep:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	596	100.0	114	US-09-109-207C-8	Sequence 8, Appl1
2	596	100.0	114	US-09-296-005-8	Sequence 8, Appl1
3	596	100.0	114	US-09-920-171-8	Sequence 8, Appl1
4	596	100.0	114	US-09-716-028-8	Sequence 8, Appl1
5	596	100.0	114	US-10-113-996-8	Sequence 8, Appl1
6	596	100.0	218	US-08-887-352B-15	Sequence 15, Appl1
7	596	100.0	218	US-08-887-352B-17	Sequence 17, Appl1
8	596	100.0	218	US-08-887-352B-19	Sequence 19, Appl1
9	596	100.0	218	US-08-887-352B-24	Sequence 24, Appl1
10	596	100.0	218	US-09-109-207C-15	Sequence 15, Appl1
11	596	100.0	218	US-09-109-207C-17	Sequence 17, Appl1
12	596	100.0	218	US-09-109-207C-19	Sequence 19, Appl1
13	596	100.0	218	US-09-109-207C-24	Sequence 24, Appl1
14	596	100.0	218	US-09-296-005-15	Sequence 15, Appl1
15	596	100.0	218	US-09-296-005-17	Sequence 17, Appl1
16	596	100.0	218	US-09-296-005-19	Sequence 19, Appl1
17	596	100.0	218	US-09-296-005-24	Sequence 24, Appl1
18	596	100.0	218	US-09-920-171-15	Sequence 15, Appl1
19	596	100.0	218	US-09-920-171-17	Sequence 17, Appl1
20	596	100.0	218	US-09-920-171-19	Sequence 19, Appl1
21	596	100.0	218	US-09-920-171-24	Sequence 24, Appl1
22	596	100.0	218	US-09-716-028-15	Sequence 15, Appl1
23	596	100.0	218	US-09-716-028-17	Sequence 17, Appl1
24	596	100.0	218	US-09-716-028-19	Sequence 19, Appl1
25	596	100.0	218	US-09-716-028-24	Sequence 24, Appl1
26	596	100.0	218	US-10-113-996-15	Sequence 15, Appl1
27	596	100.0	218	US-10-113-996-17	Sequence 17, Appl1

28	596	100.0	218	US-10-113-996-19	Sequence 19, Appl1
29	596	100.0	218	US-10-113-996-24	Sequence 24, Appl1
30	594	99.7	114	US-08-887-352B-8	Sequence 8, Appl1
31	594	99.7	218	US-09-282-505-1	Sequence 1, Appl1
32	594	99.7	218	US-09-054-255-1	Sequence 1, Appl1
33	594	99.7	218	US-09-282-846-1	Sequence 1, Appl1
34	594	99.7	218	US-09-680-145-1	Sequence 1, Appl1
35	594	99.7	218	US-09-483-588-1	Sequence 1, Appl1
36	587	98.5	248	US-08-887-352B-22	Sequence 22, Appl1
37	587	98.5	248	US-08-887-352B-23	Sequence 23, Appl1
38	587	98.5	248	US-09-109-207C-22	Sequence 22, Appl1
39	587	98.5	248	US-09-109-207C-23	Sequence 23, Appl1
40	587	98.5	248	US-09-296-005-22	Sequence 22, Appl1
41	587	98.5	248	US-09-296-005-23	Sequence 23, Appl1
42	587	98.5	248	US-09-920-171-22	Sequence 22, Appl1
43	587	98.5	248	US-09-920-171-23	Sequence 23, Appl1
44	587	98.5	248	US-09-716-028-22	Sequence 22, Appl1
45	587	98.5	248	US-09-716-028-23	Sequence 23, Appl1

ALIGNMENTS

```
RESULT 1
US-09-109-207C-8
Sequence 8, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123R1
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 8
LENGTH: 114
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-114
OTHER INFORMATION: Light chain sequence derived from MAB11
US-09-109-207C-8

Query Match      100.0%; Score 596; DB 3; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Cy 1 D1QLTQSPSSLSASVGDRTVITCRASKPVNGBDSYINWYQOKRGKAPKLLTYAASYLES 60
    |||
Db 1 D1QLTQSPSSLSASVGDRTVITCRASKPVNGBDSYINWYQOKRGKAPKLLTYAASYLES 60
    |||
Cy 61 GVSRSFGSGSGGDFLTITISLQPEDPATYTCQSHEDPYFGGTKEIKRTV 114
    |||
Db 61 GVSRSFGSGSGGDFLTITISLQPEDPATYTCQSHEDPYFGGTKEIKRTV 114

RESULT 2
US-09-296-005-8
Sequence 8, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1x
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
PRIOR APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 26
SEQ ID NO 8
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; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-296-005-8

Query Match 100.0%; Score 596; DB 3; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
DB 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
QY 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114
DB 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114

RESULT 3
US-09-920-171-8
; Sequence 8, Application US/09920171

; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/236,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 8
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-920-171-8

Query Match 100.0%; Score 596; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
DB 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
QY 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114
DB 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114

RESULT 4
US-09-716-028-8
; Sequence 8, Application US/09716028

; Patent No. 6723833
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123R1
; CURRENT APPLICATION NUMBER: US/09/716,028
; CURRENT FILING DATE: 2000-11-17
; PRIOR APPLICATION NUMBER: US 09/109,207
; PRIOR FILING DATE: 1998-06-30

; PRIOR APPLICATION NUMBER: US 60/051,554
; PRIOR FILING DATE: 1997-07-03
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 8
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; NAME/KEY: Artificial
; LOCATION: 1-114
; OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-716-028-8

Query Match 100.0%; Score 596; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
QY 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114
DB 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114

RESULT 5
US-10-113-996-8
; Sequence 8, Application US/10113996

; Patent No. 6761889
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies
; FILE REFERENCE: P1123C3US
; CURRENT APPLICATION NUMBER: US/10/113,996
; CURRENT FILING DATE: 2002-04-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/236,005
; PRIOR FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 09/920,171
; PRIOR FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 8
; LENGTH: 114
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Light chain sequence derived from MAE11
US-10-113-996-8

Query Match 100.0%; Score 596; DB 4; Length 114;
Best Local Similarity 100.0%; Pred. No. 1.1e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
DB 1 DIQLTSPSSLSASVGDVYITTCRAKPKVDEGSDSYLNMWYQOKPGKAPKLLIYAASYLE 60
QY 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114
DB 61 GVPSSRFGSGSGTDFTLTITSLQPEDFATYYCOQSHEDPYTGQGTKEIKRTV 114

RESULT 6
US-08-887-352B-15
; Sequence 15, Application US/08887352B

; Patent No. 5994511
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe

TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
TITLE OF INVENTION: Improving Polypeptides
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svoboda, Craig G.
REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 218 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-15

Query Match 100.0%; Score 596; DB 2; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGDSYLNWYQKPKKLIYASYLE 60
61 GVPSRFGSGSGTDFLTLLTSSLOPEDPATYCCQSHEDPYTFGGTVEIKRTV 114
61 GVPSRFGSGSGTDFLTLLTSSLOPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

RESULT 7
US-08-887-352B-17
Sequence 17, Application US/08887352B
Patent No. 5994511
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svoboda, Craig G.

REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 218 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-17

Query Match 100.0%; Score 596; DB 2; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGDSYLNWYQKPKKLIYASYLE 60
Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGDSYLNWYQKPKKLIYASYLE 60
61 GVPSRFGSGSGTDFLTLLTSSLOPEDPATYCCQSHEDPYTFGGTVEIKRTV 114
61 GVPSRFGSGSGTDFLTLLTSSLOPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

RESULT 8
US-08-887-352B-19
Sequence 19, Application US/08887352B
Patent No. 5994511

GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svoboda, Craig G.
REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 19:
SEQUENCE CHARACTERISTICS:
LENGTH: 218 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-19

Query Match 100.0%; Score 596; DB 2; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGDSYLNWYQKPKKLIYASYLE 60
Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGDSYLNWYQKPKKLIYASYLE 60
61 GVPSRFGSGSGTDFLTLLTSSLOPEDPATYCCQSHEDPYTFGGTVEIKRTV 114
61 GVPSRFGSGSGTDFLTLLTSSLOPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

Db 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114

RESULT 9

US-08-887-352B-24
Sequence 24, Application US/08887352B
Patent No. 5994511
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of
TITLE OF INVENTION: Improving Polypeptides
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/887,352B
FILING DATE: 03-Jul-1997
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Svoboda, Craig G.
REGISTRATION NUMBER: 39,044
REFERENCE/DOCKET NUMBER: P1123
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-1489
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
LENGTH: 218 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
US-08-887-352B-24

Query Match 100.0%; Score 596; DB 2; Length 218;
Best Local Similarity 100.0%; Pred. No. 2.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQKRGKAPKLLIYAASYLE 60

Db 1 DIQLTSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQKRGKAPKLLIYAASYLE 60

QY 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114
Db 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114

RESULT 10

US-09-109-207C-15
Sequence 15, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123R1
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 15
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial

FEATURE:
NAME/KEY: Artificial
LOCATION: 1-218
OTHER INFORMATION: Light chain sequence derived from MAB11
US-09-109-207C-15

Query Match 100.0%; Score 596; DB 3; Length 218;
Best Local Similarity 100.0%; Pred. No. 2.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQKRGKAPKLLIYAASYLE 60

Db 1 DIQLTSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQKRGKAPKLLIYAASYLE 60

QY 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114
Db 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114

RESULT 11

US-09-109-207C-17
Sequence 17, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123R1
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 17
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-218
OTHER INFORMATION: Light chain sequence derived from MAB11
US-09-109-207C-17

Query Match 100.0%; Score 596; DB 3; Length 218;
Best Local Similarity 100.0%; Pred. No. 2.4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQKRGKAPKLLIYAASYLE 60

Db 1 DIQLTSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQKRGKAPKLLIYAASYLE 60

QY 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114
Db 61 GVPSRFGSGSGTDFLTITISLQPEDPATYCCQSHEDPYTFGQGTKEIKRTV 114

RESULT 12

US-09-109-207C-19
Sequence 19, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123R1
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
PRIOR FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 19
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial
FEATURE:

NAME/KEY: Artificial
LOCATION: 1-218
OTHER INFORMATION: Light chain F(ab) sequence derived from MAE11
US-09-109-207C-19

Query Match 100.0%; Score 596; DB 3; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
QY 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114
DB 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114

RESULT 13
US-09-109-207C-24
Sequence 24, Application US/09109207C
Patent No. 6172213
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1r
CURRENT APPLICATION NUMBER: US/09/109,207C
CURRENT FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/051,554
EARLIER FILING DATE: 1997-07-03
NUMBER OF SEQ ID NOS: 44
SEQ ID NO 24
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-218
OTHER INFORMATION: Light chain F(ab)'2 sequence derived from MAE11
US-09-109-207C-24

Query Match 100.0%; Score 596; DB 3; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
QY 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114
DB 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114

RESULT 14
US-09-296-005-15
Sequence 15, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1r
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
EARLIER APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 26
SEQ ID NO 15
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial

LOCATION: 1-218
OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-296-005-15

Query Match 100.0%; Score 596; DB 3; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
QY 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114
DB 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114

RESULT 15
US-09-296-005-17
Sequence 17, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1r
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
EARLIER APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 26
SEQ ID NO 17
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-218
OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-296-005-17

Query Match 100.0%; Score 596; DB 3; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGVDRVTTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
QY 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114
DB 61 GVPSRFSGSGSGTDFTLTISLSLOPEDPATYCCQSHEDPTTFGGGTVEIKRTV 114

RESULT 16
US-09-296-005-19
Sequence 19, Application US/09296005
Patent No. 6290957
GENERAL INFORMATION:
APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
TITLE OF INVENTION: Improved Anti-1gE Antibodies and Method of Improving Polypeptides
FILE REFERENCE: P1123C1r
CURRENT APPLICATION NUMBER: US/09/296,005
CURRENT FILING DATE: 1999-04-21
EARLIER APPLICATION NUMBER: US 08/887,352
EARLIER FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 26
SEQ ID NO 19
LENGTH: 218
TYPE: PRT
ORGANISM: Artificial
FEATURE:
NAME/KEY: Artificial
LOCATION: 1-218

```
; OTHER INFORMATION: Light chain F(ab) sequence derived from MAE11
; US-09-296-005-19
Query Match
Best Local Similarity 100.0%; Score 596; DB 3; Length 218;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
61 GVPSRFGSGSGDFTLTITISLQPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

RESULT 17
; US-09-296-005-24
; Sequence 24, Application US/09296005
; Patent No. 6290957
; GENERAL INFORMATION:
; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
; FILE REFERENCE: P1123C1r
; CURRENT APPLICATION NUMBER: US/09/296,005
; EARLIER FILING DATE: 1999-04-21
; PRIOR APPLICATION NUMBER: US 08/887,352
; EARLIER FILING DATE: 1997-07-02
; NUMBER OF SEQ ID NOS: 26
; SEQ ID NO 24
; LENGTH: 218
; TYPE: PRT
; ORGANISM: Artificial
; FEATURES:
; NAME/KEY: Artificial
; LOCATION: 1-218
; OTHER INFORMATION: Light chain F(ab)'2 sequence derived from MAE11
; US-09-296-005-24
Query Match
Best Local Similarity 100.0%; Score 596; DB 3; Length 218;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
61 GVPSRFGSGSGDFTLTITISLQPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

RESULT 18
; US-09-920-171-15
; Sequence 15, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 15
; LENGTH: 218
; TYPE: PRT
```

```
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Light chain sequence derived from MAE11
; US-09-920-171-15
Query Match
Best Local Similarity 100.0%; Score 596; DB 4; Length 218;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
61 GVPSRFGSGSGDFTLTITISLQPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

RESULT 19
; US-09-920-171-17
; Sequence 17, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
; PRIOR FILING DATE: 1999-04-21
; NUMBER OF SEQ ID NOS: 44
; SEQ ID NO 17
; LENGTH: 218
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURES:
; OTHER INFORMATION: Light chain sequence derived from MAE11
; US-09-920-171-17
Query Match
Best Local Similarity 100.0%; Score 596; DB 4; Length 218;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKPVNDEGSDSYLNMWYQQRKGA PKLLIYAASYLE 60
61 GVPSRFGSGSGDFTLTITISLQPEDPATYCCQSHEDPYTFGGTVEIKRTV 114

RESULT 20
; US-09-920-171-19
; Sequence 19, Application US/09920171
; Patent No. 6682735
; GENERAL INFORMATION:
; APPLICANT: Lowman, Henry B.
; APPLICANT: Presta, Leonard G.
; APPLICANT: Jardieu, Paula M.
; APPLICANT: Lowe, John
; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
; FILE REFERENCE: P1123C2US
; CURRENT APPLICATION NUMBER: US/09/920,171
; CURRENT FILING DATE: 2001-08-01
; PRIOR APPLICATION NUMBER: US 08/887,352
; PRIOR FILING DATE: 1997-07-02
; PRIOR APPLICATION NUMBER: US 09/296,005
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;; PRIOR FILING DATE: 1999-04-21
;; NUMBER OF SEQ ID NOS: 44
;; SEQ ID NO 19
;; LENGTH: 218
;; TYPE: PRT
;; ORGANISM: Artificial Sequence.
;; FEATURE:
;; OTHER INFORMATION: Light chain F(ab) sequence derived from MAE11
US-09-920-171-19

Query Match 100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60
Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60

Qy 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114
Db 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114

RESULT 21
US-09-920-171-24
;; Sequence 24, Application US/09920171
;; Patent No. 6682735
;; GENERAL INFORMATION:

;; APPLICANT: Lowman, Henry B.
;; APPLICANT: Presta, Leonard G.
;; APPLICANT: Jardieu, Paula M.
;; APPLICANT: Lowe, John
;; TITLE OF INVENTION: Improved Anti-IgE Antibodies (as amended)
;; FILE REFERENCE: P1123C2US
;; CURRENT APPLICATION NUMBER: US/09/920,171
;; CURRENT FILING DATE: 2001-08-01
;; PRIOR APPLICATION NUMBER: US 08/887,352
;; PRIOR FILING DATE: 1997-07-02
;; PRIOR APPLICATION NUMBER: US 09/296,005
;; PRIOR FILING DATE: 1999-04-21
;; NUMBER OF SEQ ID NOS: 44
;; SEQ ID NO 24
;; LENGTH: 218
;; TYPE: PRT
;; ORGANISM: Artificial Sequence
;; FEATURE:
;; OTHER INFORMATION: Light chain F(ab)'2 sequence derived from MAE11
US-09-920-171-24

Query Match 100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60
Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60

Qy 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114
Db 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114

RESULT 22
US-09-716-028-15
;; Sequence 15, Application US/09716028
;; Patent No. 6723833
;; GENERAL INFORMATION:

;; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
;; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
;; FILE REFERENCE: P1123R1
;; CURRENT APPLICATION NUMBER: US/09/716,028
;; CURRENT FILING DATE: 2000-11-17
;; PRIOR APPLICATION NUMBER: US 09/109,207

;; PRIOR FILING DATE: 1998-06-30
;; PRIOR APPLICATION NUMBER: US 60/051,554
;; PRIOR FILING DATE: 1997-07-03
;; NUMBER OF SEQ ID NOS: 44
;; SEQ ID NO 15
;; LENGTH: 218
;; TYPE: PRT
;; ORGANISM: Artificial
;; FEATURE:
;; NAME/KEY: Artificial
;; LOCATION: 1-218
;; OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-716-028-15

Query Match 100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60
Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60

Qy 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114
Db 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114

RESULT 23
US-09-716-028-17
;; Sequence 17, Application US/09716028
;; Patent No. 6723833
;; GENERAL INFORMATION:

;; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
;; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
;; FILE REFERENCE: P1123R1
;; CURRENT APPLICATION NUMBER: US/09/716,028
;; CURRENT FILING DATE: 2000-11-17
;; PRIOR APPLICATION NUMBER: US 09/109,207
;; PRIOR FILING DATE: 1998-06-30
;; PRIOR APPLICATION NUMBER: US 60/051,554
;; PRIOR FILING DATE: 1997-07-03
;; NUMBER OF SEQ ID NOS: 44
;; SEQ ID NO 17
;; LENGTH: 218
;; TYPE: PRT
;; ORGANISM: Artificial
;; FEATURE:
;; NAME/KEY: Artificial
;; LOCATION: 1-218
;; OTHER INFORMATION: Light chain sequence derived from MAE11
US-09-716-028-17

Query Match 100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60
Db 1 DIQLTQSPSSLSASVGRVITTCRASKRPVDEGSDSYLNMWYQKPKAKPLIYAASYLES 60

Qy 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114
Db 61 GVPSRFSGSGSGTDFTLTISLSIQPEDPATYCCQSHEDPYTFGGCTKVEIKRTV 114

RESULT 24
US-09-716-028-19
;; Sequence 19, Application US/09716028
;; Patent No. 6723833
;; GENERAL INFORMATION:

;; APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
;; TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
;; FILE REFERENCE: P1123R1

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/ CURRENT APPLICATION NUMBER: US/09/716,028
/ CURRENT FILING DATE: 2000-11-17
/ PRIOR APPLICATION NUMBER: US 09/109,207
/ PRIOR FILING DATE: 1998-06-30
/ PRIOR APPLICATION NUMBER: US 60/051,554
/ PRIOR FILING DATE: 1997-07-03
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 19
/ LENGTH: 218
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-218
/ OTHER INFORMATION: Light chain F(ab)2 sequence derived from MAE11
US-09-716-028-19

Query Match          100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No.2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60

QY 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
DB 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114

RESULT 25
US-09-716-028-24
/ Sequence 24, Application US/09716028
/ Patent No. 6723833
/ GENERAL INFORMATION:
/ APPLICANT: Henry B. Lowman, Leonard G. Presta, Paula M. Jardieu, John Lowe
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies and Method of Improving Polypeptides
/ FILE REFERENCE: P1123R1
/ CURRENT APPLICATION NUMBER: US/09/716,028
/ CURRENT FILING DATE: 2000-11-17
/ PRIOR APPLICATION NUMBER: US 09/109,207
/ PRIOR FILING DATE: 1998-06-30
/ PRIOR APPLICATION NUMBER: US 60/051,554
/ PRIOR FILING DATE: 1997-07-03
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 24
/ LENGTH: 218
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-218
/ OTHER INFORMATION: Light chain F(ab)2 sequence derived from MAE11
US-09-716-028-24

Query Match          100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No.2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60

QY 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
DB 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114

RESULT 26
US-10-113-996-15
/ Sequence 15, Application US/10113996
/ Patent No. 6761889
/ GENERAL INFORMATION:
/ APPLICANT: Lowman, Henry B.
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies
/ FILE REFERENCE: P1123C3US
/ CURRENT APPLICATION NUMBER: US/10/113,996
/ CURRENT FILING DATE: 2002-04-01
/ PRIOR APPLICATION NUMBER: US 08/887,352
/ PRIOR FILING DATE: 1997-07-02
/ PRIOR APPLICATION NUMBER: US 09/296,005
/ PRIOR FILING DATE: 1999-04-21
/ PRIOR APPLICATION NUMBER: US 09/920,171
/ PRIOR FILING DATE: 2001-08-01
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 17
/ LENGTH: 218
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-218
/ OTHER INFORMATION: Light chain sequence derived from MAE11
US-10-113-996-17

Query Match          100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No.2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60

QY 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
DB 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
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/ APPLICANT: Lowman, Henry B.
/ APPLICANT: Presta, Leonard G.
/ APPLICANT: Jardieu, Paula M.
/ APPLICANT: Lowe, John
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies
/ FILE REFERENCE: P1123C3US
/ CURRENT APPLICATION NUMBER: US/10/113,996
/ CURRENT FILING DATE: 2002-04-01
/ PRIOR APPLICATION NUMBER: US 08/887,352
/ PRIOR FILING DATE: 1997-07-02
/ PRIOR APPLICATION NUMBER: US 09/296,005
/ PRIOR FILING DATE: 1999-04-21
/ PRIOR APPLICATION NUMBER: US 09/920,171
/ PRIOR FILING DATE: 2001-08-01
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 15
/ LENGTH: 218
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-218
/ OTHER INFORMATION: Light chain sequence derived from MAE11
US-10-113-996-15

Query Match          100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No.2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60

QY 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
DB 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114

RESULT 27
US-10-113-996-17
/ Sequence 17, Application US/10113996
/ Patent No. 6761889
/ GENERAL INFORMATION:
/ APPLICANT: Lowman, Henry B.
/ APPLICANT: Presta, Leonard G.
/ APPLICANT: Jardieu, Paula M.
/ APPLICANT: Lowe, John
/ TITLE OF INVENTION: Improved Anti-IgE Antibodies
/ FILE REFERENCE: P1123C3US
/ CURRENT APPLICATION NUMBER: US/10/113,996
/ CURRENT FILING DATE: 2002-04-01
/ PRIOR APPLICATION NUMBER: US 08/887,352
/ PRIOR FILING DATE: 1997-07-02
/ PRIOR APPLICATION NUMBER: US 09/296,005
/ PRIOR FILING DATE: 1999-04-21
/ PRIOR APPLICATION NUMBER: US 09/920,171
/ PRIOR FILING DATE: 2001-08-01
/ NUMBER OF SEQ ID NOS: 44
/ SEQ ID NO 17
/ LENGTH: 218
/ TYPE: PRT
/ ORGANISM: Artificial
/ FEATURE:
/ NAME/KEY: Artificial
/ LOCATION: 1-218
/ OTHER INFORMATION: Light chain sequence derived from MAE11
US-10-113-996-17

Query Match          100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No.2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60
DB 1 DIQLTQSPSSLSASVGDRTVITTCRASKRPVDEGDSYLNWYQKRGKAPKLLIYAASYLES 60

QY 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
DB 61 GVPSPRFGSGSGGTDFTLTISLQPEDPATYTCQOSHEDPYTFGGGTVEIKRTV 114
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Db 61 GVPSPFSGSGGTDFTLTISLSLOPEDPATYCCQSHDPTFGGKTVEIKRTV 114

RESULT 28
US-10-113-996-19
Sequence 19, Application US/10113996
Patent No. 6761889

GENERAL INFORMATION:

APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.

APPLICANT: Lowe, John

TITLE OF INVENTION: Improved Anti-IGB Antibodies
FILE REFERENCE: P1123CJUS

CURRENT APPLICATION NUMBER: US/10/113,996
CURRENT FILING DATE: 2002-04-01

PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02

PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21

PRIOR APPLICATION NUMBER: US 09/920,171
PRIOR FILING DATE: 2001-08-01

NUMBER OF SEQ ID NOS: 44
SEQ ID NO 19

LENGTH: 218
TYPE: PRT

ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Light chain F(ab) sequence derived from MAE11
US-10-113-996-19

Query Match 100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGRVTITTCRASKPVDEGDSYINWYQOKPKGKAPKLLIYAASYLES 60
1 DIQLTQSPSSLSASVGRVTITTCRASKPVDEGDSYINWYQOKPKGKAPKLLIYAASYLES 60

Db 61 GVPSPFSGSGGTDFTLTISLSLOPEDPATYCCQSHDPTFGGKTVEIKRTV 114
61 GVPSPFSGSGGTDFTLTISLSLOPEDPATYCCQSHDPTFGGKTVEIKRTV 114

RESULT 29

US-10-113-996-24
Sequence 24, Application US/10113996
Patent No. 6761889

GENERAL INFORMATION:
APPLICANT: Lowman, Henry B.
APPLICANT: Presta, Leonard G.
APPLICANT: Jardieu, Paula M.

APPLICANT: Lowe, John

TITLE OF INVENTION: Improved Anti-IGB Antibodies
FILE REFERENCE: P1123CJUS

CURRENT APPLICATION NUMBER: US/10/113,996
CURRENT FILING DATE: 2002-04-01

PRIOR APPLICATION NUMBER: US 08/887,352
PRIOR FILING DATE: 1997-07-02

PRIOR APPLICATION NUMBER: US 09/296,005
PRIOR FILING DATE: 1999-04-21

PRIOR APPLICATION NUMBER: US 09/920,171
PRIOR FILING DATE: 2001-08-01

NUMBER OF SEQ ID NOS: 44
SEQ ID NO 24

LENGTH: 218
TYPE: PRT

ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Light chain F(ab)'2 sequence derived from MAE11
US-10-113-996-24

Query Match 100.0%; Score 596; DB 4; Length 218;
Best Local Similarity 100.0%; Pred. No. 2,4e-49;
Matches 114; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DIQLTQSPSSLSASVGRVTITTCRASKPVDEGDSYINWYQOKPKGKAPKLLIYAASYLES 60
1 DIQLTQSPSSLSASVGRVTITTCRASKPVDEGDSYINWYQOKPKGKAPKLLIYAASYLES 60

Db 61 GVPSPFSGSGGTDFTLTISLSLOPEDPATYCCQSHDPTFGGKTVEIKRTV 114
61 GVPSPFSGSGGTDFTLTISLSLOPEDPATYCCQSHDPTFGGKTVEIKRTV 114

Search completed: June 3, 2005, 12:42:57
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